

**COURSE OVERVIEW TM0207**

**Certified RCA Leader**

**Advanced Root Cause Analysis (RCA) Methods & Leadership**

**Course Title**

Certified RCA Leader: *Advanced Root Cause Analysis (RCA) Methods & Leadership*

**Course Date/Venue**

February 23-27, 2025/Boardroom 1, Elite Byblos Hotel, Al Barsha, Sheikh Zayed Road, Dubai, UAE

**Course Duration/Credits**

Five days/3.0 CEUs/30 PDHs



**Course Reference**

TM0207

**Course Description**



***This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.***



This course is designed to provide participants with an advanced overview of root cause analysis (RCA) methods and leadership. It covers the successful and unsuccessful results, human behavior, accountability, investigator attitude (mindset), investigation steps, job task analysis and the seven-step methodology; the investigation of the factors in evidence preservation, preserve and control evidence collect physical evidence, documentary evidence and human evidence and witness recollection statement; the lines of inquiry, individual mindset, personal and organizational accountability, management control elements and pareto analysis; and establishing contributing factors and validating underlying factors.



During this interactive course, participants will learn to plan corrective actions; carryout report writing by preparing report template, sample incident analysis report template, grade cards/scoresheets and root cause analysis; apply the principles and techniques of effective team management and leadership and investigation of organization and management team; implement action plan follow up; and employ other methodologies on root cause analysis.

## Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Get certified as a “*Certified RCA Leader*”
- Discuss root cause analysis (RCA) covering successful and unsuccessful results, human behavior, accountability, investigator attitude (mindset), investigation steps, job task analysis and the seven-step methodology
- Identify the scope of problem comprising of problem statement, problem description, difference mapping and extent of condition review
- Investigate the factors in evidence preservation, preserve and control evidence, collect physical evidence, documentary evidence and human evidence and witness recollection statement
- Employ lines of inquiry, individual mindset, personal and organizational accountability, management control elements and pareto analysis
- Illustrate fault tree analysis, task analysis, critical activity charting and actions and factors charting
- Establish contributing factors and validate underlying factors
- Plan corrective actions through action planning, change management, S.M.A.R.T.E.R., safety precedence sequence, barriers and aids analysis, solution selection tree and matrix, contingency plan, effectiveness review and performance indicator development
- Carryout report writing by preparing report template, sample incident analysis report template, grade cards/scoresheets and root cause analysis
- Apply the principles and techniques of effective team management and leadership as well as investigation of organization and management team
- Implement action plan follow up through verification of action plan, documentation, line management accountability, key performance indicators, goal setting and action plan effectiveness verification
- Employ other methodologies on root cause analysis consisting of HSYS, checklists, assessment of safety significant teams (ASSET), safety through organizational learning (SOL) and PROACT™

## Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

## Who Should Attend

This course provides an advanced overview of root cause analysis (RCA) methods and leadership for those who are responsible for others in the workplace such as managers, engineers, supervisors, team leaders, HSE engineers, senior HSE officers, foremen and junior production operation staff.



**Course Certificate(s)**

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a “Certified RCA Leader”. Certificates are valid for 5 years.

**Recertification is FOC for a Lifetime.**

**Sample of Certificates**

The following are samples of the certificates that will be awarded to course participants:-



- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*



**Haward Technology Middle East**

Continuing Professional Development (HTME-CPD)

**CEUs**

Page 1 of 1

### CEU Official Transcript of Records

**TOR Issuance Date:** 12-Oct-17

**HTME No.** PAR11317

**Participant Name:** Atif Al Harbi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
TM0207	<b>Certified RCA Leader: Advanced Root Cause Analysis (RCA) Methods &amp; Leadership</b>	October 08-12, 2017	30	3.0

**Total No. of CEU's Earned as of TOR Issuance Date** **3.0**

**TRUE COPY**



Maricel De Guzman  
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, 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 their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for 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 is accredited by












P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | Fax: +971 2 3091 716 | E-mail: info@haward.org | Website: www.haward.org


\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*

## Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- 
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.

- 
The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors 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 2018-1 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 2018-1 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 Accreditors 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.

## Course Fee

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.



### Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



**Mr. Steve Magalios**, CEng, PGDip (on-going), MSc, BSc, is a **Senior Engineer & Management Consultant** with almost **40 years** of extensive **On-shore/Offshore** experience in the **Oil & Gas, Construction, Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **Preventive & Predictive Maintenance, Reliability Centered Maintenance, Applied Maintenance Management, Reliability Modelling, Reliability Techniques, Reliability Design Techniques, Advanced Root Causes Analysis & Techniques, Reliability Management, Reactive & Proactive Maintenance, Maintenance Planning & Scheduling, Maintenance Process, Maintenance Planning, Reliability Engineering Analysis (RE), Inspection, Assessment, Repair and Maintenance of Concrete Structure, Dynamic Analysis of Rotating Equipment Foundations & Structural Steel Piperacks, Civil Building Maintenance, Structural Engineering for Non-Structural Engineers, Basic Structural Engineering UD, Structural Renovation of Buildings, Pipeline Hot Tapping, Hot Tapping Equipment, Hot Tapping Operation, Welding Engineering, Fabrication & Inspection, Welding Techniques, Practical Welding Technology, Welding Inspection, Welding & Machine Shop, Welding & Machining, Welding Types & Applications, Welding Safety, Welding Defects Analysis, TIG & Arc Welding, Shielded Metal Arc Welding, Gas Tungsten & Gas Metal Arc Welding, Welding Procedure Specifications & Qualifications (WPS & WPQ), Aluminium Welding, Safe Welding, International Welding Codes, Welding Procedure Specifications, Welding & Brazing, Welder Performance Qualification, Pipeline Operation & Maintenance, Pipeline Systems, Pipeline Design & Construction, Pipeline Repair Methods, Pipeline Engineering, Pipeline Integrity Management System (PIMS), Pipeline Pigging, Piping & Pipe Support Systems, Piping Systems & Process Equipment, Piping System Repair & Maintenance and Piping Integrity Management. Further, he is also well-versed in Computer Aided Design (CAD), Building & Road Design Skills, Civil Engineering Design, Structural Reliability Engineering, Road Construction & Maintenance, Concrete Structures & Building Rehabilitation, Reinforced Concrete Structures Protection, Geosynthetics & Ground Improvement Methods, Blueprint Reading & Interpretation, Blue Print Documentation, Mechanical Drawings, P&ID, Flow Diagram Symbols, Land Surveying & Property Evaluation, Cartographic Representation, Soil Classification, Cadastral Surveying & Boundary Definition, Project Engineering & Design, Construction Management, Project Planning & Execution, Site Management, Site Supervision, Effective Resource Management, Project Evaluation, FEED Management, EPC Projects Design, Project Completion & Workover, AutoCAD, STAAD-PRO, GIS, ArcInfo, ArcView, Autodesk Map and various programming languages such as FORTRAN, BASIC and AUTOLISP. Moreover, his experience includes Project Scheduling & Cost Control, Project Planning, Scheduling & Cost Control Professional, Effective Quality Management System (QMS), QMS Framework, Communication & Listening Techniques, Office Management, Invoice Management, Quality Assurance Standards, Human Resource Scorecard Management. Currently, he is the **Chartered Professional Surveyor Engineer & Urban-Regional Planner** wherein he is deeply involved in providing exact data, measurements and determining properly boundaries. He is also responsible in preparing and maintaining sketches, maps, reports and legal description of surveys.**

During his career, Mr. Magalios has gained his expertise and thorough practical experience through challenging positions such as a **Project Site Construction Manager, Supervision Head/Construction Manager, Construction Site Manager, Project Manager, Deputy PMS Manager, Head of the Public Project Inspection Field Team, Technical Consultant, Senior Consultant, Consultant/Lecturer, Construction Team Leader, Lead Pipeline Engineer, Project Construction Lead Supervising Engineer, Lead Site Engineer, Senior Site Engineer Lead Engineer, Senior Site Engineer, R.O.W. Coordinator, Site Representative, Supervision Head, Contractor, Client Site Representative and Acting Client Site Representative** for international Companies such as the Public Gas Corporation, Penspen International Limited, Eptista Servicios de Ingenieria S.I., J/V ILF Pantec TH. Papaioannou & Co. – Emenergy Engineering, J/V Karaylannis S.A. – Intracom Constructions S.A., Ergaz Ltd., Alkyonis 7, Palaeo Faliro, Piraeus, Elpet Valkaniki S.A., Asprofos S.A., J/V Depa S.A. just to name a few.

Mr. Magalios is a **Registered Chartered Engineer** and has **Master** and **Bachelor** degrees in **Surveying Engineering** from the **University of New Brunswick, Canada** and the **National Technical University of Athens, Greece**, respectively. Further, he is currently enrolled for **Post-graduate in Quality Assurance** from the **Hellenic Open University, Greece**. He has further obtained a **Level 4B Certificates** in **Project Management** from the **National & Kapodistrian University of Athens, Greece** and **Environmental Auditing** from the **Environmental Auditors Registration Association (EARA)**. Moreover, he is a **Certified Instructor/Trainer, a Chartered Engineer** of **Technical Chamber of Greece** and has delivered numerous trainings, workshops, seminars, courses and conferences internationally.

### Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

### Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

#### **Day 1: Sunday, 23<sup>rd</sup> of February 2025**

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	<b>PRE-TEST</b>
0830 – 0930	<b>Introduction to Root Cause Analysis (RCA)</b> Defining Cause Analysis • Successful and Unsuccessful Results • Human Behavior • Accountability • Investigator Attitude (Mindset) • Investigation Steps • Job Task Analysis • The Seven-Step Methodology
0930 – 0945	Break
0945 – 1100	<b>Step 1: Scope the Problem</b> Problem Statement • Problem Statement Examples • Problem Description • Problem Description Examples • Difference Mapping • Difference Mapping Examples • Extent of Condition Review • Extent of Condition Review Examples
1100 – 1230	<b>Step 2: Investigate the Factors</b> Evidence Preservation • Preserve and Control Evidence • Collect Physical Evidence • Collect Documentary Evidence • Collect Human Evidence • Witness Recollection Statement • Interviewing
1230 – 1245	Break
1245 – 1420	<b>Step 2: Investigate the Factors (cont'd)</b> Lines of Inquiry: Question Generators • Question Generator: Individual Mindset • Question Generator: Personal and Organizational Accountability • Question Generator: Management Control Elements • Pareto Analysis • Pareto Chart Template • Pareto Analysis Examples
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

**Day 2: Monday, 24<sup>th</sup> of February 2025**

0730 – 0930	<b>Step 3: Reconstruct the Story</b> Fault Tree Analysis • Fault Tree Example • Task Analysis • Task Analysis Example • Critical Activity Charting (Critical Incident Technique) • Critical Activity Chart Example • Actions and Factors Charting • Actions and Factors Chart Example • Notes
0930 – 0945	Break
0945 – 1100	<b>Step 4: Establish Contributing Factors</b> Contributing Factor Test • Five WHYs • Five WHYs Example • Exxon-Valdez Oil Spill Example • Tokai-Mura Criticality Incident Example • Reactor Trip Example • Cause and Effect Trees • Cause and Effect Tree Examples
1100 – 1230	<b>Step 4: Establish Contributing Factors (cont'd)</b> Difference Analysis (a.k.a Change Analysis) • Broken Back Example • Falling Objects Example • Breaker Trip Example • Defense Analysis (a.k.a Barrier Analysis) • Breaker Fire Example • Structure Tree Diagrams • Fishbone (Ishikawa) Diagram
1230 – 1245	Break
1245 – 1420	<b>Step 4: Establish Contributing Factors (cont'd)</b> Forearm Fracture Example • Poor Safety Culture Example • Defense -in-Depth Analysis • MORT Analysis • Mort Maintenance Example • Production/Protection Strategy Analysis • Safety Culture Analysis
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

**Day 3: Tuesday, 25<sup>th</sup> of February 2025**

0730 – 0930	<b>Step 5: Validate Underlying Factors</b> Support/Refute Methodology • Truck will not Start Example • Crane Incident Example • WHY Factor Staircase • Lost Time Away Injury Example • Criticality Incident Example • Broken Back Example • Root Cause Test
0930 – 0945	Break
0945 – 1100	<b>Step 5: Validate Underlying Factors (cont'd)</b> Course Evaluation Matrix • Dump Truck Example • Extent of Cause Review • Example 1: Flood Protection Strategy Inadequate • Example 2: Leak Due to Stress Corrosion Cracking • Example 3: Rental Car Flat Tire • Example 4: Waste Not Labeled as Required
1100 – 1215	<b>Step 6: Plan Corrective Actions</b> Action Plan • Change Management • S.M.A.R.T.E.R. • Safety Precedence Sequence (Hierarchy of Corrective Action Effectiveness) • Barriers and Aids Analysis (Pros and Cons) • Solution Section Tree • Solution Selection Matrix
1215 – 1230	Break
1230 – 1420	<b>Step 6: Plan Corrective Actions (cont'd)</b> Contingency Plan • Lessons to Be Learned Communication Plan • Institutionalization/Active Coaching Plan • Effectiveness Review • Performance Indicator Development
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three



**Day 4: Wednesday, 26<sup>th</sup> of February 2025**

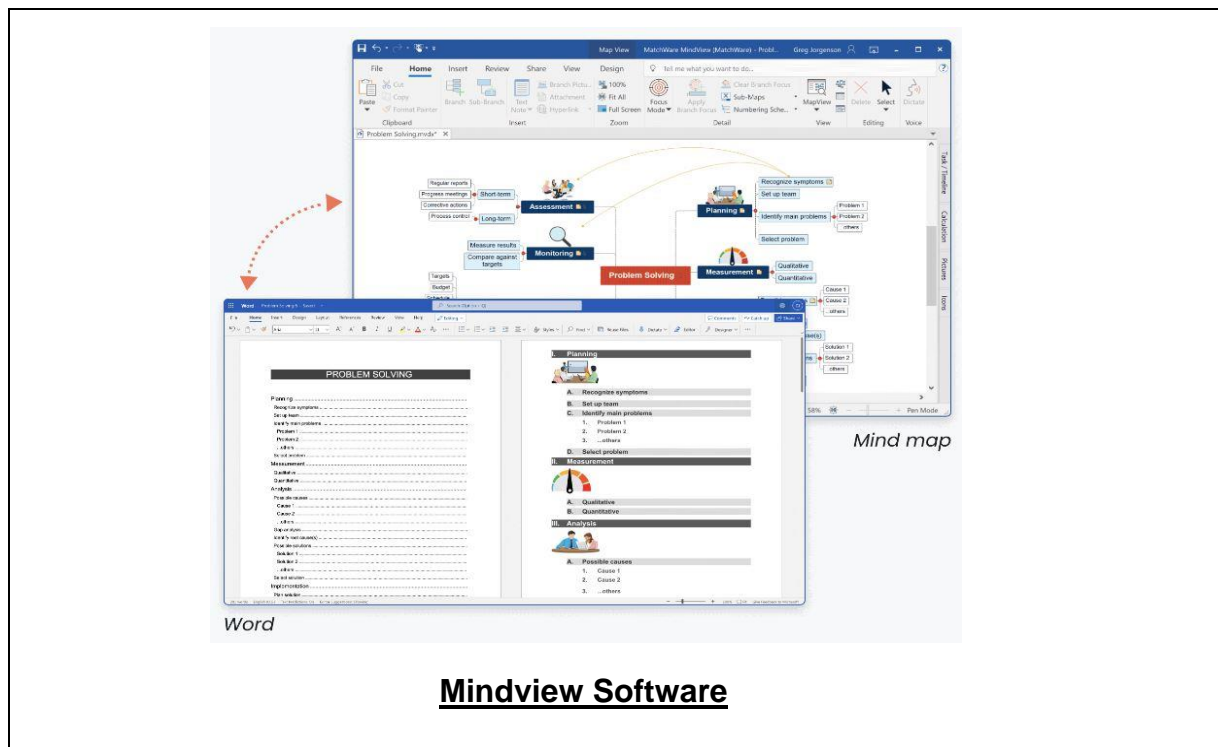
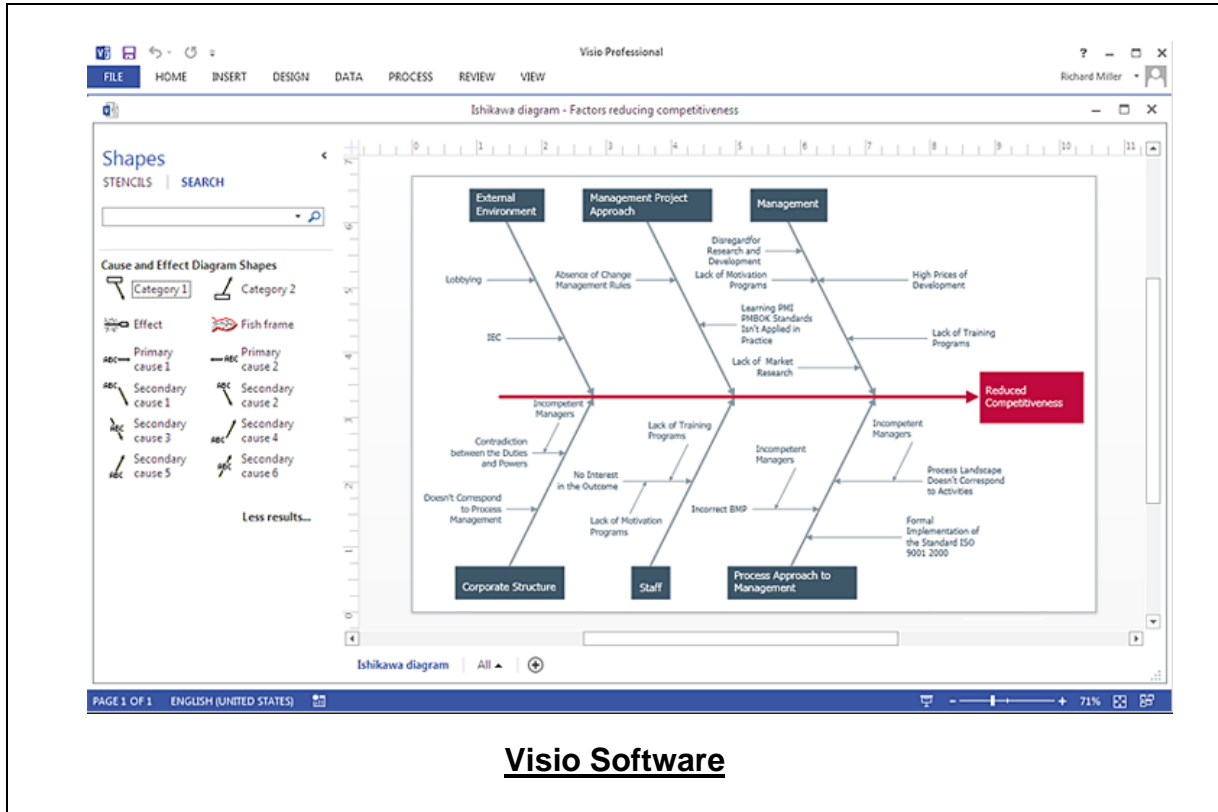
0730 – 0930	<b>Step 7: Report Writing</b> Preparing to Create Your Report • Report Template • Sample Incident Analysis Report Template • Grade Cards/Scoresheets • Root Cause Analysis – Sample Organizational Learning Scoresheet
0930 – 0945	Break
0945 – 1100	<b>Team Management</b> Principles & Techniques of Effective Team Management & Leadership
1100 – 1230	<b>Team Management (cont'd)</b> Organization & Management of the Investigation Team, From Start to End
1230 – 1245	Break
1245 – 1420	<b>Action Plan Follow Up</b> Verification of Action Plan Implementation • Documentation • Line Management Accountability
1420 – 1430	<b>Recap</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

**Day 5: Thursday, 27<sup>th</sup> of February 2025**

0730 – 0930	<b>Action Plan Follow Up (cont'd)</b> Key Performance Indicators • Goal-Setting • Verification of Action Plan Effectiveness
0930 – 0945	Break
0945 – 1100	<b>Root Cause Analysis – Other Methodologies</b> Introduction • American Institute of Chemical Engineers Review • HSYS • Checklists • Assessment of Safety Significant Teams (ASSET) • Safety Through Organisational Learning (SOL) • PROACT™
1100 – 1215	<b>Practical Exercise on Root Cause Analysis</b> Formation of Investigation Teams • Setting the Scene – Video and Team Discussion • Question Session – Gathering of Information • Team Investigation – Analysis of Information • Team Discussion – Identification of Risk Control Measures
1215 – 1230	Break
1230 – 1300	<b>Practical Exercise on Root Cause Analysis (cont'd)</b> Producing a Basic Report, A Team Summary Report • Recommendations for Change – Creation of Action Plan • Corrective Actions • Preventive Actions • Implementation Stage
1300 – 1315	<b>Course Conclusion</b> Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1315 – 1415	<b>COMPETENCY EXAM</b>
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

**Simulator (Hands-on Practical Sessions)**

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators “Visio Software”, “Mindview Software” and “QRA”.





The screenshot displays the QRA System Simulator interface with several key components:

- Top Left:** A hierarchical tree view of the system components, including Engine System, Fuel System, Propeller, Aerodynamics, Avionics, and various sensors and actuators.
- Top Right:** A fault tree diagram showing the relationship between various failure events and their contributing factors.
- Bottom Left:** A graph titled "Uncertainty" showing the relationship between parameters and the resulting uncertainty in the CDF.
- Bottom Center:** A statistics table with the following data:
 

STATISTIC	VALUE
Mean	0.3501
1st	0.163
5th	0.2202
10th	0.2544
50th	0.3513
90th	0.4439
95th	0.489
99th	0.5167
- Bottom Right:** A GATE (Goal Structuring Notation) diagram showing the flow of events and their associated consequences.

**QRA System Simulator**

**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)

