COURSE OVERVIEW IE0104
Data Communications & Networking

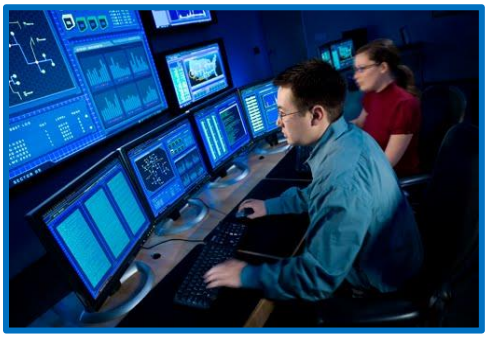
Course Title
Data Communications & Networking

Course Date/Venue
December 16-20, 2024/ Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
IE0104

Course Duration/Credits
Five day/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Data Communications and Networking. It covers the importance, roles and responsibilities of data communications and networking; the different types of networks covering LAN, WAN, WLAN, etc; the effective network architecture, network topology and design considerations; the common network protocols like the TCP/IP, HTTP, FTP, etc.; and the stack and layers of network protocol.

During this interactive course, participants will learn the network security threats and vulnerabilities, monitoring and incident response and effective network security strategies; the different network management tools and techniques; monitoring and optimizing network performance; the different wireless networking standards (802.11a/b/g/n/ac), networking strategies and security considerations; the different cloud networking models comprising of public, private and hybrid; and the effective cloud networking strategies and security considerations.

Course Objectives

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

- Apply and gain a good working knowledge on data communications and networking
- Discuss the importance, roles and responsibilities of data communications and networking
- Identify different types of networks covering LAN, WAN, WLAN, etc. and develop effective network architecture, network topology and design considerations
- Recognize the common network protocols like TCP/IP, HTTP, FTP, etc.
- Explain stack and layers and analyse and troubleshoot network protocol
- Evaluate network security threats and vulnerabilities, monitoring and incident response and develop effective network security strategies
- Apply different network management tools and techniques as well as monitor and optimize network performance
- Analyse different wireless networking standards (802.11a/b/g/n/ac) as well as networking strategies and security considerations
- Identify different cloud networking models such as public, private and hybrid
- Develop effective cloud networking strategies and security considerations

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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of data communications and networking for network administration, business owners, managers and those who is interested in learning more about computer networks and how they work, regardless of their background or profession.

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 Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations:-

- 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 **0.6 CEUs** (Continuing Education Units) or **06 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.

- 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.

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. Sydney Thoresson, PE, BSc, is a **Senior Engineer** with over **40 years** of extensive experience within the **Petrochemical**, **Utilities**, **Oil**, **Gas** and **Power** industries. His specialization highly evolves in **Engineering Drawings**, **Isometric Drawings**, Process Flow Diagram (**PFD**), **GPS & Data Capture**, **Piping & Instrumentation Diagrams**, **Piping & Instrumentation Diagram** (**P&ID**), **P&ID** Reading, Interpretation & Developing, **Draw & Interpret Electrical Diagrams**, Electrical Single Line Drawings **(ESLD)**, **Interpretation of Electrical Drawings**, Electrical **Drawings**, Control Circuits & Schematic Layouts, **Electrical Drawing**, **Electrical Motors**, **Switchgears**, **Transformers**, Variable Frequency Drives (**VFD**), **AC & DC Drives**, **Variable Speed Drives & Generators**, **Electrical Safety**, **Power System Equipment**, **Electrical Forecasting**, **Transmission Networks**, **Substation**, **Distribution Networks**, **Substation Automation Systems & Application**, **Electrical** System, **HV/LV Electrical** Authorisation, **HV/LV Equipment**, **Circuit Breaker**, **Motor Controllers**, **Hazardous Area Classification**, **Intrinsic Safety**, **Electrical Power Systems** Quality & Troubleshooting, **Protection & Relay**, **Electric & Control** System Commissioning, **Electrical Hazards Assessment**, **Electrical Equipment**, **Personal Protective Equipment**, Lock-Out & Tag-Out (**LOTO**), **ALARP & LOPA** Methods, Confined Workspaces, Power **Quality**, Power **Network**, Power **Distribution**, **Distribution Systems**, **Power Systems Control**, **Power Systems Security**, Power **Electronics**, Electrical **Substations**, **UPS** & **Battery System**, **Earthing & Grounding**, Power **Generation**, **Protective Systems**, **Electrical Generators**, **Power** & **Distribution Transformers**, **Generator Protection**, **Instrumented Protective Devices** Maintenance & Testing, Instrumented Protective Function (**IPF**), **Process Instrumentation & Control**, **Instrument Calibration & Maintenance**, **Field Instrumentation**, **Emergency Shutdown** System, **Process Control & Safeguarding**, **Refining & Rotating Equipment**, **Equipment Operations**, **Short Circuit Calculation**, **Voltage Drop Calculation**, **Lighting Calculation**, **Hazardous Area Classification**, **Intrinsic Safety**, **Liquid & Gas Flowmetering**, **Custody Measurement**, **Ultrasonic Flowmetering**, **Loss Control**, **Loss Control** & **Multiphase Flowmetering**, **Custody Measurement** & **Loss Control**, **Gas Measurement**, **Process Control Instrumentation**, **Compressor Control & Protection**, **Control Systems**, Programmable Logic Controllers (**PLC**), **SCADA**, Distributed Control Systems (**DCS**) especially in **Honeywell DCS**, **H&B DCS**, **Modicon, Siemens**, **Telemecanique**, **Wonderware** and **Adrioit**, Safety Instrumented Systems (**SIS**), Safety Integrity Level (**SIL**), Emergency Shutdown (**ESD**), **Flowmetering & Custody Measurement**, **Multiphase Flowmetering**, **Measurement and Control**, **Mass Measuring System Batching** (**Philips**), Arc Furnace Automation-Ferro Alloys, Walking Beam Furnace, Blast Furnace, Billet Casting Station, Cement Kiln Automation, Factory Automation and Quality Assurance Accreditation (**ISO 9000** and **Standard BS 5750**). He is currently the **Projects Manager** wherein he manages projects in the field of electrical and automation engineering and in-charge of various process hazard analysis, fault task analysis, FMEA and HAZOP study.

During Mr. Thoresson's career life, he has gained his thorough and practical experience through various challenging positions and dedication as the **Contracts & Projects Manager**, **Managing Director**, **Technical Director**, **Divisional Manager**, **Plant Automation Engineer**, **Senior Consulting Engineer**, **Senior Systems Engineer**, **Consulting Engineer**, **Service Engineer** and **Section Leader** from several international companies such as **Philips**, **FEDMIS**, **AEG**, **DAVY International**, **BOSCH**, **Billiton** and **Endress/Hauser**.

Mr. Thoresson is a **Registered Professional Engineering Technologist** and has a **Bachelor's** degree in **Electrical & Electronics Engineering** and a **National Diploma** in **Radio Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and an active member of the International Society of Automation (**ISA**) and the Society for Automation, Instrumentation, Measurement and Control (**SAIMC**). He has further delivered numerous trainings, courses, seminars, conferences and workshops worldwide.

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.

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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: ***Monday 16th of December 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Data Communications & Networking***
0930 – 0945	*Break*
0945 – 1030	***Importance of Effective Data Communications & Networking***
1030 – 1115	***Roles & Responsibilities of Network Professionals***
1115 – 1230	***Network Architecture***
1230 – 1245	*Break*
1245 – 1420	***Identifying Different Types of Networks (LAN, WAN, WLAN, Etc.)***
1420 - 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Tuesday 17th of December 2024***

0730 – 0830	***Developing Effective Network Architecture***
0830 – 0930	***Network Topology & Design Considerations***
0930 – 0945	*Break*
0945 – 1100	***Network Protocols***
1100 – 1230	***Identifying Common Network Protocols (TCP/IP, HTTP, FTP, Etc.)***
1230 – 1245	*Break*
1245 – 1330	***Network Protocol Stack & Layers***
1330 – 1420	***Network Protocol Analysis & Troubleshooting***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Wednesday 18th of December 2024***

0730 – 0830	***Network Security***
0830 - 0930	***Identifying Network Security Threats & Vulnerabilities***
0930 – 0945	*Break*
0945 – 1100	***Developing Effective Network Security Strategies***
1100 – 1230	***Network Security Monitoring & Incident Response***
1230– 1245	*Break*
1345 – 1330	***Network Management***
1330 - 1420	***Identifying Different Network Management Tools & Techniques***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4:	Thursday 19th of December 2024
0730 – 0930	***Network Performance Monitoring & Optimization***
0930 – 0945	*Break*
0945 – 1100	***Network Capacity Planning***
1100 – 1230	***Wireless Networking***
1230 – 1245	*Break*
1245- 1330	***Identifying Different Wireless Networking Standards (802.11a/B/G/N/Ac)***
1330 - 1420	***Developing Effective Wireless Networking Strategies***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5:	Friday 20th of December 2024
0730 - 0830	***Wireless Network Security Considerations***
0830 - 0930	***Cloud Networking***
0930 - 0945	*Break*
0945 - 1130	***Identifying Different Cloud Networking Models (Public, Private, Hybrid)***
1130 - 1230	***Developing Effective Cloud Networking Strategies***
1230 - 1245	*Break*
1245 - 1345	***Cloud Network Security Considerations***
1345 - 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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