COURSE OVERVIEW SS0305
Broadcast Technologies & Operations – Essentials

Course Title
Broadcast Technologies & Operations – Essentials

Course Date/Venue
Session 1: April 07-11, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: December 07-11, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

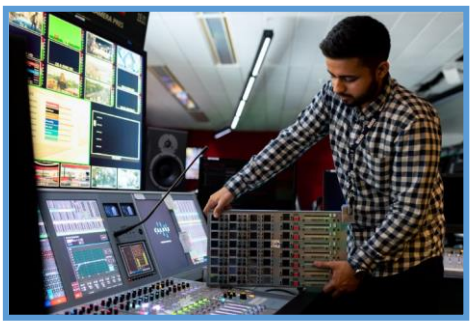
Course Reference
SS0305

Course Duration/Credits
Five days/3.0 CEUs/30.0 PDHs

Course Description

80% of this course is practical sessions where participants will be engaged in a series of interactive small groups, class workshops and role-plays

This course is designed to provide delegates a detailed and up-to-date overview of Broadcast Technologies & Operations – Essentials. It covers the analog and digital broadcasting; the broadcast signal types, standards, equipment essentials and workflow basics; the broadcast transmission covering over-the-air (OTA) broadcasting, cable and satellite distribution, internet streaming and IP-based broadcasting and comparison of transmission mediums; the key components of studio design, camera placements and angles and space for equipment and personnel; the studio equipment operation, lighting techniques, audio clarity and techniques for minimizing noise and distortion; the role of a floor manager and studio safety protocols; and the broadcast signal transmission, IP-based broadcasting and broadcast antennas.



Further, the course will also discuss the satellite operations, role of satellite ground stations and budget calculations; the advantages of cable over traditional OTA broadcasting, fiber-optic transmission systems and challenges in maintaining cable and fiber infrastructure; the tools for signal monitoring and diagnostics, audio-video sync and detecting and resolving dropouts and artifacts; and maintaining consistent broadcast quality.

During this interactive course, participants will learn how to prepare for live events, manage technical crew during live productions, switch between feeds and cameras and handle unexpected disruptions; the post-production techniques, graphics and animation in broadcasting and content archiving and storage; the broadcast automation and compliance and legal considerations covering copyright laws, broadcasting regulations, advertising compliance and ethical considerations in broadcast content; the emerging broadcast technologies; and the OTT platforms and streaming and the future of broadcasting.

Course Objectives

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

- Apply and gain an in-depth knowledge on broadcast technologies and operations
- Differentiate analog and digital broadcasting and discuss broadcast signal types, standards, equipment essentials and workflow basics
- Explain broadcast transmission covering over-the-air (OTA) broadcasting, cable and satellite distribution, internet streaming and IP-based broadcasting and comparison of transmission mediums
- Describe the key components of studio design, camera placements and angles and space for equipment and personnel
- Apply studio equipment operation, lighting techniques, audio clarity and techniques for minimizing noise and distortion
- Describe the role of a floor manager and implement studio safety protocols
- Recognize broadcast signal transmission, IP-based broadcasting and broadcast antennas
- Apply satellite operations, discuss the role of satellite ground stations and link budget calculations
- Describe the advantages of cable over traditional OTA broadcasting, fiber-optic transmission systems and challenges in maintaining cable and fiber infrastructure
- Use tools for signal monitoring and diagnostics, ensure audio-video sync, detect and resolve dropouts and artifacts and maintain consistent broadcast quality
- Prepare for live events, manage technical crew during live productions, switch between feeds and cameras and handle unexpected disruptions
- Employ post-production techniques, graphics and animation in broadcasting and content archiving and storage
- Apply broadcast automation and discuss compliance and legal considerations covering copyright laws, broadcasting regulations, advertising compliance and ethical considerations in broadcast content
- Describe the emerging broadcast technologies, OTT platforms and streaming and the future of broadcasting

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 overview of all significant aspects and considerations of broadcast technologies and operations for broadcast professionals, media professionals, technical support staff, managers and supervisors and those who work or aspire to work in broadcasting and media.

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

20% Lecture
80% Practical Exercises, Case Studies, Games, Customized Videos, Site Visits, Simulations, Role Play, Group Skill Sessions, Outdoor & Indoor Activities

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

Course Fee

US$ 8,000 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 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: -

- 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 **30.0 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 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. Pete Du Plessis is a **Senior Management Consultant** with over **40 years** of extensive experience. His expertise lies extensively in the areas of Effective **Creative Thinking & Problem-Solving** Techniques, **Change** Management, **Negotiation** Skills, **Presentation** Skills, **Communication & Influencing** Skills, **Communication & Interpersonal** Skills, **Emotional Intelligence**, Effective **Business Writing Skills**, **Leadership** Skills, **Leadership & Team Building**, **Interpersonal Skills & Teambuilding**, **Coaching & Mentoring**, **Innovation & Creativity** Skills, **Office Management & Administration** Skills, **Time & Stress** Management, **Crisis** Management, **Human Resources** Management, **Customer Service** Excellence, Essential Skills for **Effective Training**, **Role Modelling & Development**, **Business Etiquette & Protocol**, Enhancing Personal Impact through **Emotional Intelligence**, **Communication & Presentation** Skills, **Influencing** Skills, **Training & Designing** a Training Plan, Executive **Coaching**, **Mentoring & Team Building**, **Coaching & Counselling**, **Contract** Management & Negotiation, **Risk** Management, **Supply Chain** Management, **Supplier** & **Contractors'** Management, **Tendering** & **Supplier** Selection, **Contractors Agreements & SLAs**, **Budgeting & Forecasting** Skills, Effective **Budgeting & Cost Control**, **Financial** Analysis & Reporting, **Commercial** Management, Effective **Commercial Negotiation** Skills, International Oil & Gas **Commercial Contracts** & **Negotiation**, **Business Process** Development & Optimization, **Business Continuity** Planning, Service Provider Performance & Monitoring, **Cash Flow & Business Finance**, **Business Continuity**, **Situational Analysis** Fundamentals, **SWOT** Analysis, **Gap** Analysis, **Change** Management, Human Resource Management (**HRM**), Human Resource Development (**HRD**), **HR** Business Development, **HR** Practices & Strategy, **Behaviour Based Interviewing & Recruitment**, **Learning & Development**, **Project** Management, **Document** Management, **Record** Management, **Contract** Management, **Negotiation** Management, **Risk** Management, Production & Inventory Management, Warehousing, Purchasing & Marketing Management, Work Engineering & Advanced Production Techniques, Production Logistics, Fleet Management, Stores & Stock Control, Human Resources & Industrial Relations Management, Quality Assurance & Control, Operations Management, Project Management, and Strategic Planning& Management. Previously, he was the **Quality Manager** of **Benteler Automotive**, where he was responsible for implementing, controlling and managing quality and technical department processes and systems and mobilizing the quality control department, procedures and quality management system.

During his career life, Mr. Plessis has worked with several prestigious companies occupying numerous challenging managerial and technical positions such as being the **Training & Development Manager**, **Finance Manager**, **Operations Manager & Trainer**, **Technical Trainer**, **Quality Manager**, **Supplier Manager**, **Logistics & Purchasing Manager**, **Contract & Commercial Manager**, **Production & Material Planning Manager**, **Project Manager**, **Engineering Manager & Trainer**, **Metrologist**, **Consultant**, **Quality Control Inspector**, **Fitter & Machinist**, **Apprentice Fitter** and **Part-time Instructor**. All throughout his career, he has mastered and specialized in the application of project management, warehouse & inventory control, value chain analysis, logistics & strategic planning, process flow analysis, business process evaluation & re-engineering, master-plan development, capacity planning and site space-planning & development.

Mr. Plessis has a **Master's Management Diploma** and a **Bachelor's** degree with **Honours** in **Industrial Engineering** & **Management**. Further, he has gained **Diploma** in **Quality Management** as well as in **Production Management**. He is also a **Certified Assessor** & **Moderator** with the Manufacturing, Engineering & Related Services Education and Training Authority (MERSETA), a **Certified Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and a **Certified Instructor/Trainer** by the APICS.

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

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Broadcast Industry Overview*** *History & Evolution of Broadcast Technologies • Key Stakeholders: Networks, Stations, & Service Providers • Differences Between Analog & Digital Broadcasting • Future Trends in Broadcasting (e.g., OTT, Streaming)*
0930 – 0945	*Break*
0945 -1040	***Broadcast Signal Types*** *Analog versus Digital Signals • Standard Definition (SD), High Definition (HD), & Ultra-High Definition (UHD) • Audio versus Video Signals • Signal Modulation & Transmission Basics*
1040 - 1135	***Broadcasting Standards*** *NTSC, PAL, & SECAM Standards • DVB-T/T2 (Digital Video Broadcasting) • ATSC (Advanced Television Systems Committee) • Regional Variations in Standards*
1135 - 1230	***Broadcast Equipment Essentials*** *Cameras & Studio Equipment Basics • Mixers, Encoders, & Decoders • Lighting Equipment for Studios • Microphones & Audio Processing Equipment*
1230 - 1245	*Break*
1245 – 1320	***Broadcast Workflow Basics*** *Content Creation & Pre-Production Processes • Production Workflows in Studios • Post-Production Essentials • Distribution & Transmission*
1320 - 1420	***Broadcast Transmission*** *Over-the-Air (OTA) Broadcasting • Cable & Satellite Distribution • Internet Streaming & IP-Based Broadcasting • Comparison of Transmission Mediums*
1420 – 1430	***Recap*** *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

0730 – 0830	***Studio Design & Layout*** *Types of Studios (News, Drama, Variety Shows) • Key Components of Studio Design (Acoustics, Lighting) • Camera Placements & Angles • Managing Space for Equipment & Personnel*
0830 - 0930	***Studio Equipment Operation*** *Camera Types & their Uses • Functions of Audio Mixers & Switchers • Role of Teleprompters & Character Generators • Studio Intercom Systems*
0930 – 0945	*Break*
0945 – 1100	***Lighting Techniques*** *Key Lighting Concepts (Three-Point Lighting) • Types of Studio Lights (Floodlights, Spotlights) • Adjusting Light for Various Broadcast Formats • Managing Shadows & Glare*

1100 - 1230	***Audio for Broadcast*** *Importance of Audio Clarity in Broadcasts • Techniques for Minimizing Noise & Distortion • Handling Microphones & Audio Levels • Synchronization of Audio & Video*
1230 - 1245	*Break*
1245 – 1320	***Role of a Floor Manager*** *Communication Between Director & Studio Crew • Overseeing Equipment & Set Readiness • Managing Talent on Set • Ensuring Safety & Efficiency*
1320 - 1420	***Studio Safety Protocols*** *Electrical & Fire Safety in Studios • Handling Heavy & Delicate Equipment • Emergency Procedures for Live Broadcasts • Risk Assessments for Productions*
1420 – 1430	***Recap*** *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

0730 – 0830	***Broadcast Signal Transmission*** *Basics of Transmitters & Receivers • Compression & Encoding Technologies • Uplink & Downlink Processes in Satellite Transmission • Signal Propagation Challenges & Solutions*
0830 - 0930	***IP-Based Broadcasting*** *Introduction to IPTV & Streaming Platforms • Adaptive Bitrate Streaming Techniques • Content Delivery Networks (CDNs) • Integration of IP Technologies with Traditional Broadcast*
0930 – 0945	*Break*
0945 – 1100	***Broadcast Antennas*** *Types of Broadcast Antennas • Placement & Alignment of Antennas • Maintenance & Troubleshooting • Understanding Signal Interference & its Mitigation*
1100 – 1230	***Satellite Operations*** *Satellite Frequency Bands (C, Ku, Ka bands) • Role of Satellite Ground Stations • Link Budget Calculations • Satellite Footprints & Beam Coverage*
1230 – 1245	*Break*
1245 – 1320	***Cable & Fiber-Optic Distribution*** *Advantages of Cable Over Traditional OTA Broadcasting • Understanding Fiber-Optic Transmission Systems • Challenges in Maintaining Cable & Fiber Infrastructure • Emerging Technologies in Cable Broadcasting*
1320 - 1420	***Monitoring & Quality Control*** *Tools for Signal Monitoring & Diagnostics • Ensuring Audio-Video Sync • Detecting & Resolving Dropouts & Artifacts • Maintaining Consistent Broadcast Quality*
1420 – 1430	***Recap*** *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

0730 - 0830	***Live Broadcasting Essentials*** *Preparing for Live Events • Managing Technical Crew During Live Productions • Switching Between Feeds and Cameras • Handling Unexpected Disruptions*
0830 - 0930	***Post-Production Techniques*** *Video Editing Fundamentals • Adding Graphics, Effects, and Transitions • Sound Editing and Mixing • Rendering and Exporting for Broadcast*

0930 – 0945	*Break*
0945 – 1100	***Graphics & Animation in Broadcasting*** *Overview of Character Generators and On-Screen Graphics • Integration of Augmented Reality (AR) in Broadcasting • Designing Lower Thirds and On-Screen Tickers • Real-time Graphics Generation for Live Events*
1100 - 1230	***Content Archiving & Storage*** *Best Practices for Media Storage • Managing Video Archives for Future Use • Cloud-Based Storage Solutions • Backup and Disaster Recovery*
1230 - 1245	*Break*
1245 – 1320	***Broadcast Automation*** *Role of Automation in Playout Systems • Scheduling Programs and Ad Insertions • Software Solutions for Broadcast Automation • Troubleshooting Automation Errors*
1320 - 1420	***Compliance & Legal Considerations*** *Understanding Copyright Laws • Adherence to Broadcasting Regulations • Managing Advertising Compliance • Ethical Considerations in Broadcast Content*
1420 – 1430	***Recap*** *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

0730 – 0830	***Emerging Broadcast Technologies*** *4K and 8K Broadcasting • Virtual Reality (VR) and Augmented Reality (AR) in Broadcasting • Artificial Intelligence in Content Production • Advances in Audio Technology (Dolby Atmos, Immersive Audio)*
0830 - 0930	***OTT Platforms & Streaming*** *Introduction to Over-the-Top (OTT) Services • Subscription-Based versus Ad-Supported Models • Challenges in Content Delivery for OTT Platforms • Integrating Traditional Broadcast with OTT*
0930 – 0945	*Break*
0945 – 1230	***Broadcast Engineering Careers*** *Roles in Broadcast Technology and Operations • Skills Required for Broadcast Engineers • Certifications and Professional Development Opportunities • Career Growth Trends in the Industry*
1230 – 1245	*Break*
1245 – 1315	***Future of Broadcasting*** *Impact of 5G on Broadcast Technologies • Interactive Broadcasting and Viewer Engagement • Green Broadcasting Initiatives • Predicting the Next Decade of Broadcasting Advancements*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

80% of this highly-interactive course is practical sessions. Theory learnt (20%) will be applied using various role-plays, case studies and practical sessions.

Course Coordinator

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