

Qualification Pack



Biomedical Equipment Assistant

Electives: Anesthesiology equipment and devices/ Pain Management equipment and devices/ Cardiovascular equipment and devices/ Dental equipment and devices/ Ear, Nose, Throat (ENT) equipment and devices/ Gastroenterological equipment and devices/ Urological equipment and devices/ General Hospital equipment and devices/ Operation Theatre (OT) equipment and devices/ Respiratory equipment and devices/ Neurological equipment and devices/ Personnel use equipment and devices/ Obstetrical and Gynaecological (OG) equipment and devices/ Ophthalmic equipment and devices/ Rehabilitation equipment and devices/ Physical support equipment and devices/ Interventional and Radiology equipment and devices/ Rheumatology equipment and devices/ Dermatology and Plastic Surgery equipment and devices/ Paediatric and Neonatology Medical equipment and devices/ Oncology equipment and devices/ Radiotherapy equipment and

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devices/ Nephrology and Renal care equipment and devices/ In-Vitro Diagnostics Devices/ Ambulance Equipment and Devices/ Medical Software/ CSSD equipment and devices/ PSA Based Oxygen plants & Medical Gas Pipeline Systems

QP Code: HSS/Q5601

Version: 4.0

NSQF Level: 4

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HSS/Q5601: Biomedical Equipment Assistant

Brief Job Description

This is a skilling course in which individuals would install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for medical equipment/medical devices and In-vitro Diagnostic (IVD) devices. They provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Personal Attributes

Medical Equipment Assistant (Basic Clinical Equipment) should have the ability to understand and follow complex technical instructions, ability to pay close attention to detail, ability to effectively use computer applications, familiarity with the techniques of maintaining a filing system, accuracy, dependability, meticulous, communicative, a passion for helping people, experience in medical environment and terminology.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [HSS/N5616: Deliver, install, set-up medical equipment/devices and provide post-installation instructions to hospital/ facility staff](#)
2. [HSS/N5617: Diagnose, Repair, Calibrate, maintain, troubleshoot and provide technical assistance for equipment malfunctions](#)
3. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Electives(mandatory to select at least one):

Elective 1: Anesthesiology equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5618: Facilitate Biomedical Instrumentation Services for Anesthesiology equipment and devices](#)

Elective 2: Pain Management equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to

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provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5619: Facilitate Biomedical Instrumentation Services for Pain Management equipment and devices](#)

Elective 3: Cardiovascular equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5620: Facilitate Biomedical Instrumentation Services for Cardiovascular equipment and devices](#)

Elective 4: Dental equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5621: Facilitate Biomedical Instrumentation Services for Dental equipment and devices](#)

Elective 5: Ear, Nose, Throat (ENT) equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5622: Facilitate Biomedical Instrumentation Services for Ear, Nose, Throat \(ENT\) equipment and devices](#)

Elective 6: Gastroenterological equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5623: Facilitate Biomedical Instrumentation Services for Gastroenterological equipment and devices](#)

Elective 7: Urological equipment and devices

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This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

[1. HSS/N5624: Facilitate Biomedical Instrumentation Services for Urological equipment and devices](#)

Elective 8: General Hospital equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

[1. HSS/N5625: Facilitate Biomedical Instrumentation Services for General Hospital equipment and devices](#)

Elective 9: Operation Theatre (OT) equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

[1. HSS/N5626: Facilitate Biomedical Instrumentation Services for Operation Theatre \(OT\) equipment and devices](#)

Elective 10: Respiratory equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

[1. HSS/N5627: Facilitate Biomedical Instrumentation Services for Respiratory equipment and devices](#)

Elective 11: Neurological equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

[1. HSS/N5628: Facilitate Biomedical Instrumentation Services for Neurological equipment and devices](#)

Elective 12: Personnel use equipment and devices

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This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5629: Facilitate Biomedical Instrumentation Services for Personnel use equipment and devices](#)

Elective 13: Obstetrical and Gynaecological (OG) equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5630: Facilitate Biomedical Instrumentation Services for Obstetrical and Gynaecological \(OG\) equipment and devices](#)

Elective 14: Ophthalmic equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5631: Facilitate Biomedical Instrumentation Services for Ophthalmic equipment and devices](#)

Elective 15: Rehabilitation equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5632: Facilitate Biomedical Instrumentation Services for Rehabilitation equipment and devices](#)

Elective 16: Physical support equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5633: Facilitate Biomedical Instrumentation Services for Physical support equipment and devices](#)

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Elective 17: Interventional and Radiology equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5634: Facilitate Biomedical Instrumentation Services for Interventional and Radiology equipment and devices](#)

Elective 18: Rheumatology equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5635: Facilitate Biomedical Instrumentation Services for Rheumatology equipment and devices](#)

Elective 19: Dermatology and Plastic Surgery equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5636: Facilitate Biomedical Instrumentation Services for Dermatology and Plastic Surgery equipment and devices](#)

Elective 20: Paediatric and Neonatology Medical equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5637: Facilitate Biomedical Instrumentation Services for Paediatric and Neonatology Medical equipment and devices](#)

Elective 21: Oncology equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

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1. [HSS/N5638: Facilitate Biomedical Instrumentation Services for Oncology equipment and devices](#)

Elective 22: Radiotherapy equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5639: Facilitate Biomedical Instrumentation Services for Radiotherapy equipment and devices](#)

Elective 23: Nephrology and Renal care equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5640: Facilitate Biomedical Instrumentation Services for Nephrology and Renal care equipment and devices](#)

Elective 24: In-Vitro Diagnostics Devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5641: Facilitate Biomedical Instrumentation Services for In-Vitro Diagnostics \(IVD\) devices](#)

Elective 25: Ambulance Equipment and Devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5642: Facilitate Biomedical Instrumentation Services for Ambulance Equipment and Devices](#)

Elective 26: Medical Software

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

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1. [HSS/N5643: Facilitate Biomedical Instrumentation Services for medical software](#)

Elective 27: CSSD equipment and devices

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N5644: Facilitate Biomedical Instrumentation Services for CSSD equipment and devices](#)

Elective 28: PSA Based Oxygen plants & Medical Gas Pipeline Systems

This elective would provide skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

1. [HSS/N0929: Facilitate Biomedical Instrumentation Services for PSA Based Oxygen plants & Medical Gas Pipeline Systems](#)

Qualification Pack (QP) Parameters

Sector	Healthcare
Sub-Sector	Allied Health & Paramedics
Occupation	Non-Direct Care
Country	India
NSQF Level	4
Credits	93
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3211.0501

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Minimum Educational Qualification & Experience	<p>12th grade Pass with NA of experience OR 10th grade pass plus 2-year NTC OR 10th grade pass with 3 Years of experience relevant experience OR 11th grade pass with 1.5 years of experience relevant experience OR Previous relevant Qualification of NSQF Level (3.5) with 1.5 years of experience relevant experience OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience relevant</p>
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	18/02/2028
NSQC Approval Date	18/02/2025
Version	4.0
Reference code on NQR	QG-04-HE-03618-2025-V2-HSSC
NQR Version	2

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HSS/N5616: Deliver, install, set-up medical equipment/devices and provide post-installation instructions to hospital/ facility staff

Description

Individual would be able to deliver, install, set-up medical equipment/devices and provide post-installation instructions to hospital/ facility staff.

Scope

The scope covers the following :

- Providing and setting up the required medical equipment in the concerned medical department
- Provide post-installation instructions to hospital/ facility staff

Elements and Performance Criteria

To be competent, the user/individual on the job must be able to:

- PC1.** Perform pre-installation site visit before delivery
- PC2.** Receive, inspect and inventory equipment upon delivery at installation location
- PC3.** Help with the installation of equipment
- PC4.** Complete documentation process related to delivery and installation of equipment
- PC5.** Provide post-installation technical assistance and instruction to the hospital/facility staff on the installed medical equipment operation and maintenance safely and correctly

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant legislation, standards, policies, and procedures followed by the provider
- KU2.** follows established protocols as defined in organisations policy while keeping and maintaining the medical records
- KU3.** check the related forms required during equipment set-up
- KU4.** assemble the equipment appropriately
- KU5.** have knowledge about the equipment

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** use effective written communication protocols
- GS2.** communicate information (for example, facts, ideas, or messages) in a brief, clear, and organised manner
- GS3.** produce written information, which may include technical material, that is appropriate for the intended audience

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- GS4.** understand and interpret written material, including technical materials, rules, regulations, instructions, reports, charts, graphs, or tables
- GS5.** practice effective communication with colleagues and other health professionals while maintaining a professional attitude
- GS6.** seek out and listen to colleagues and other health professionals
- GS7.** express information (for example, ideas or facts) to individual or groups effectively, taking into account the audience and nature of the information
- GS8.** how to make sound, well-informed, and objective decisions
- GS9.** how to perceive the impact and implications of decisions
- GS10.** develop specific goals and plans to prioritise, organise, and accomplish work
- GS11.** how to work with clients and customers (that is, any individual who uses or receives the services or products that unit produces, including the general public, individuals who work in the agency, other agencies, or organisations outside the Government)
- GS12.** how to assess their needs, provide information or assistance, resolves their problems, or satisfies their expectations; knows about available products and services; is committed to provide quality products and services
- GS13.** detect the fault and take corrective measures
- GS14.** analyse information and use logic to address work-related issues and problems
- GS15.** analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS16.** demonstrate the ability to adapt to rapidly changing situations, e.g.: responds appropriately to critical situations, retains composure in stressful situations, applies existing skills to new situations

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	65	100	40	50
PC1. Perform pre-installation site visit before delivery	15	20	8	10
PC2. Receive, inspect and inventory equipment upon delivery at installation location	15	20	8	10
PC3. Help with the installation of equipment	10	20	8	10
PC4. Complete documentation process related to delivery and installation of equipment	10	20	8	10
PC5. Provide post-installation technical assistance and instruction to the hospital/facility staff on the installed medical equipment operation and maintenance safely and correctly	15	20	8	10
NOS Total	65	100	40	50

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National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5616
NOS Name	Deliver, install, set-up medical equipment/devices and provide post-installation instructions to hospital/ facility staff
Sector	Healthcare
Sub-Sector	Allied Health & Paramedics
Occupation	Non-Direct Care
NSQF Level	4
Credits	4.5
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

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HSS/N5617: Diagnose, Repair, Calibrate, maintain, troubleshoot and provide technical assistance for equipment malfunctions

Description

The individual needs to diagnose, repair, calibrate, maintain, troubleshoot and provide technical assistance for equipment malfunctions

Scope

The scope covers the following :

- Calibrating and helping in equipment maintenance

Elements and Performance Criteria

To be competent, the user/individual on the job must be able to:

- PC1.** Ensure calibration task is complete within specified departmental time period or manufacturer's recommendations
- PC2.** Ensure preventive maintenance tasks are complete within specified departmental time period
- PC3.** Respond to device failures reported by users on-call
- PC4.** Diagnose and repair basic equipment malfunctions on-site.
- PC5.** Troubleshoot for major equipment malfunctions
- PC6.** Schedule and oversee third party repair and maintenance work
- PC7.** Carry out proper documentation of calibration, preventive maintenance, on-call and on-site assistance and repairs
- PC8.** Maintain the inventory of the equipment, accessories, spare parts, operating and service manuals and their inventory communication and ensure its proper storage, documentation and retrieval whenever necessary
- PC9.** Maintain orders, supplies and returns of parts or equipment through approved vendors or manufacturers
- PC10.** Respond to institutional emergencies appropriately
- PC11.** Ensure self, public and employee safety in and around work areas
- PC12.** Displaying appropriate professional appearance for the workplace
- PC13.** Apply self-hygiene and follow infection control guidelines
- PC14.** Demonstrate correct waste disposal methods as per guidelines and regulations
- PC15.** Demonstrate circular economy practices in the medical device sector

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant legislation, standards, policies, and procedures followed by the provider

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- KU2.** how to follow established protocols as defined in organisations policy while keeping and maintaining the medical records
- KU3.** test the equipment
- KU4.** calibrate the equipment
- KU5.** record calibration on relevant sheet
- KU6.** review technical manuals and regularly attend training sessions
- KU7.** explain and demonstrate correct operation of medical equipment

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** use effective written communication protocols
- GS2.** communicate information (for example, facts, ideas, or messages) in a brief, clear and organised manner
- GS3.** produce written information, which may include technical material, that is appropriate for the intended audience
- GS4.** understand and interpret written material, including technical materials, rules, regulations, instructions, reports, charts, graphs, or tables
- GS5.** practice effective communication with colleagues and other health professionals while maintaining a professional attitude
- GS6.** seek out and listen to colleagues and other health professionals
- GS7.** express information (for example, ideas or facts) to individual or groups effectively, taking into account the audience and nature of the information
- GS8.** how to make sound, well-informed, and objective decisions
- GS9.** how to perceive the impact and implications of decisions
- GS10.** develop specific goals and plans to prioritise, organise, and accomplish work
- GS11.** how to work with clients and customers (that is, any individual who uses or receives the services or products that unit produces, including the general public, individuals who work in the agency, other agencies, or organisations outside the Government)
- GS12.** how to assess their needs, provide information or assistance, resolves their problems, or satisfies their expectations; knows about available products and services; is committed to provide quality products and services
- GS13.** detect the fault and take corrective measures
- GS14.** analyse information and use logic to address work-related issues and problems
- GS15.** analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently
- GS16.** demonstrate the ability to adapt to rapidly changing situations, e.g.: responds appropriately to critical situations, retains composure in stressful situations, applies existing skills to new situations

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	195	70	35	50
PC1. Ensure calibration task is complete within specified departmental time period or manufacturer's recommendations	20	5	5	5
PC2. Ensure preventive maintenance tasks are complete within specified departmental time period	20	5	5	5
PC3. Respond to device failures reported by users on-call	10	5	5	5
PC4. Diagnose and repair basic equipment malfunctions on-site.	15	5	5	5
PC5. Troubleshoot for major equipment malfunctions	15	5	2	-3
PC6. Schedule and oversee third party repair and maintenance work	15	5	3	3
PC7. Carry out proper documentation of calibration, preventive maintenance, on-call and on-site assistance and repairs	15	5	5	5
PC8. Maintain the inventory of the equipment, accessories, spare parts, operating and service manuals and their inventory communication and ensure its proper storage, documentation and retrieval whenever necessary	15	5	5	5
PC9. Maintain orders, supplies and returns of parts or equipment through approved vendors or manufacturers	10	5	-	5
PC10. Respond to institutional emergencies appropriately	10	5	-	2
PC11. Ensure self, public and employee safety in and around work areas	10	5	-	2
PC12. Displaying appropriate professional appearance for the workplace	10	5	-	2

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Apply self-hygiene and follow infection control guidelines	10	5	-	2
PC14. Demonstrate correct waste disposal methods as per guidelines and regulations	10	3	-	2
PC15. Demonstrate circular economy practices in the medical device sector	10	2	-	2
NOS Total	195	70	35	50

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National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5617
NOS Name	Diagnose, Repair, Calibrate, maintain, troubleshoot and provide technical assistance for equipment malfunctions
Sector	Healthcare
Sub-Sector	Allied Health & Paramedics
Occupation	Non-Direct Care
NSQF Level	4
Credits	2.5
Version	1.0
Next Review Date	18/02/2028

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DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Qualification Pack

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

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- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	25/02/2026
Next Review Date	25/02/2029
NSQC Clearance Date	25/02/2026

Qualification Pack

HSS/N5618: Facilitate Biomedical Instrumentation Services for Anesthesiology equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5618
NOS Name	Facilitate Biomedical Instrumentation Services for Anesthesiology equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5619: Facilitate Biomedical Instrumentation Services for Pain Management equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5619
NOS Name	Facilitate Biomedical Instrumentation Services for Pain Management equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5620: Facilitate Biomedical Instrumentation Services for Cardiovascular equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5620
NOS Name	Facilitate Biomedical Instrumentation Services for Cardiovascular equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5621: Facilitate Biomedical Instrumentation Services for Dental equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5621
NOS Name	Facilitate Biomedical Instrumentation Services for Dental equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5622: Facilitate Biomedical Instrumentation Services for Ear, Nose, Throat (ENT) equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5622
NOS Name	Facilitate Biomedical Instrumentation Services for Ear, Nose, Throat (ENT) equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5623: Facilitate Biomedical Instrumentation Services for Gastroenterological equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5623
NOS Name	Facilitate Biomedical Instrumentation Services for Gastroenterological equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5624: Facilitate Biomedical Instrumentation Services for Urological equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

Qualification Pack

- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5624
NOS Name	Facilitate Biomedical Instrumentation Services for Urological equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5625: Facilitate Biomedical Instrumentation Services for General Hospital equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5625
NOS Name	Facilitate Biomedical Instrumentation Services for General Hospital equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5626: Facilitate Biomedical Instrumentation Services for Operation Theatre (OT) equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5626
NOS Name	Facilitate Biomedical Instrumentation Services for Operation Theatre (OT) equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5627: Facilitate Biomedical Instrumentation Services for Respiratory equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

Qualification Pack

- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5627
NOS Name	Facilitate Biomedical Instrumentation Services for Respiratory equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5628: Facilitate Biomedical Instrumentation Services for Neurological equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5628
NOS Name	Facilitate Biomedical Instrumentation Services for Neurological equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5629: Facilitate Biomedical Instrumentation Services for Personnel use equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5629
NOS Name	Facilitate Biomedical Instrumentation Services for Personnel use equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5630: Facilitate Biomedical Instrumentation Services for Obstetrical and Gynaecological (OG) equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5630
NOS Name	Facilitate Biomedical Instrumentation Services for Obstetrical and Gynaecological (OG) equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5631: Facilitate Biomedical Instrumentation Services for Ophthalmic equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5631
NOS Name	Facilitate Biomedical Instrumentation Services for Ophthalmic equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5632: Facilitate Biomedical Instrumentation Services for Rehabilitation equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5632
NOS Name	Facilitate Biomedical Instrumentation Services for Rehabilitation equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5633: Facilitate Biomedical Instrumentation Services for Physical support equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5633
NOS Name	Facilitate Biomedical Instrumentation Services for Physical support equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5634: Facilitate Biomedical Instrumentation Services for Interventional and Radiology equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5634
NOS Name	Facilitate Biomedical Instrumentation Services for Interventional and Radiology equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5635: Facilitate Biomedical Instrumentation Services for Rheumatology equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5635
NOS Name	Facilitate Biomedical Instrumentation Services for Rheumatology equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5636: Facilitate Biomedical Instrumentation Services for Dermatology and Plastic Surgery equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5636
NOS Name	Facilitate Biomedical Instrumentation Services for Dermatology and Plastic Surgery equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5637: Facilitate Biomedical Instrumentation Services for Paediatric and Neonatology Medical equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5637
NOS Name	Facilitate Biomedical Instrumentation Services for Paediatric and Neonatology Medical equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5638: Facilitate Biomedical Instrumentation Services for Oncology equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5638
NOS Name	Facilitate Biomedical Instrumentation Services for Oncology equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5639: Facilitate Biomedical Instrumentation Services for Radiotherapy equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5639
NOS Name	Facilitate Biomedical Instrumentation Services for Radiotherapy equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5640: Facilitate Biomedical Instrumentation Services for Nephrology and Renal care equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5640
NOS Name	Facilitate Biomedical Instrumentation Services for Nephrology and Renal care equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5641: Facilitate Biomedical Instrumentation Services for In-Vitro Diagnostics (IVD) devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5641
NOS Name	Facilitate Biomedical Instrumentation Services for In-Vitro Diagnostics (IVD) devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5642: Facilitate Biomedical Instrumentation Services for Ambulance Equipment and Devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

Qualification Pack

- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5642
NOS Name	Facilitate Biomedical Instrumentation Services for Ambulance Equipment and Devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5643: Facilitate Biomedical Instrumentation Services for medical software

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5643
NOS Name	Facilitate Biomedical Instrumentation Services for medical software
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N5644: Facilitate Biomedical Instrumentation Services for CSSD equipment and devices

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N5644
NOS Name	Facilitate Biomedical Instrumentation Services for CSSD equipment and devices
Sector	Healthcare
Sub-Sector	
Occupation	Non-Direct Care
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Qualification Pack

HSS/N0929: Facilitate Biomedical Instrumentation Services for PSA Based Oxygen plants & Medical Gas Pipeline Systems

Description

This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

Scope

The scope covers the following :

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC1.** Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements
- PC2.** Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- PC3.** Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.
- PC4.** Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.
- PC5.** Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.
- PC6.** Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

- PC7.** Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

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- PC8.** Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.
- PC9.** Conduct scheduled calibration and periodic preventive maintenance
- PC10.** Maintain inventory and supply chain of parts and supplies
- PC11.** Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.
- PC12.** Schedule and oversee third party repair and maintenance work
- PC13.** Describe and follow safety procedures while working with the equipment and at the workplace
- PC14.** Identify safety hazards in the workplace and apply knowledge of responsibilities for notification
- PC15.** Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures
- PC16.** Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
- PC17.** Ensure management reports reflect all appropriate equipment histories

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies

To be competent, the user/individual on the job must be able to:

- PC18.** Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
- PC19.** Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures
- PC20.** Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
- PC21.** Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
- PC22.** Ensure action is annotated within Maintenance Management System according to departmental policy
- PC23.** Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** List the various types of defined medical equipment and devices required in the healthcare settings
- KU2.** Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
- KU3.** List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
- KU4.** Identify the circuits of the defined medical equipment and devices.

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- KU5.** Identify the electronic components in the defined medical equipment and devices.
- KU6.** Identify different types of cables and connectors used in the defined medical equipment and devices.
- KU7.** Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.
- KU8.** Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.
- KU9.** Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.
- KU10.** Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.
- KU11.** Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.
- KU12.** State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.
- KU13.** Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.
- KU14.** Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.
- KU15.** Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Manage work efficiently in the professional practice of bio-medical instrumentation services
- GS2.** Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform installation and setting-up of the defined medical equipment and devices.</i>	30	40	30	40
PC1. Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements	-	-	-	-
PC2. Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.	-	-	-	-
PC3. Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.	-	-	-	-
PC4. Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.	-	-	-	-
PC5. Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.	-	-	-	-
PC6. Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices	-	-	-	-
<i>Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.</i>	30	40	30	40
PC7. Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.	-	-	-	-
PC9. Conduct scheduled calibration and periodic preventive maintenance	-	-	-	-
PC10. Maintain inventory and supply chain of parts and supplies	-	-	-	-
PC11. Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.	-	-	-	-
PC12. Schedule and oversee third party repair and maintenance work	-	-	-	-
PC13. Describe and follow safety procedures while working with the equipment and at the workplace	-	-	-	-
PC14. Identify safety hazards in the workplace and apply knowledge of responsibilities for notification	-	-	-	-
PC15. Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures	-	-	-	-
PC16. Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition	-	-	-	-
PC17. Ensure management reports reflect all appropriate equipment histories	-	-	-	-
<i>Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies</i>	10	20	15	20
PC18. Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures	-	-	-	-
PC20. Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.	-	-	-	-
PC21. Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.	-	-	-	-
PC22. Ensure action is annotated within Maintenance Management System according to departmental policy	-	-	-	-
PC23. Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines	-	-	-	-
NOS Total	70	100	75	100

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	HSS/N0929
NOS Name	Facilitate Biomedical Instrumentation Services for PSA Based Oxygen plants & Medical Gas Pipeline Systems
Sector	Healthcare
Sub-Sector	
Occupation	Medical Device and Equipment Occupations & Services
NSQF Level	4
Credits	4
Version	1.0
Last Reviewed Date	18/02/2025
Next Review Date	18/02/2028
NSQC Clearance Date	18/02/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Either each element/Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory, viva and Skills Practical for each element/PC.
2. The assessment for the theory part will be based on knowledge bank of questions approved by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate/batch at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical & viva for every student at each examination/ training center based on these criteria.
5. In case of successfully passing as per passing percentage of the job role, the trainee is certified for the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

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(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5616.Deliver, install, set-up medical equipment/devices and provide post-installation instructions to hospital/ facility staff	65	100	40	50	255	30
HSS/N5617.Diagnose, Repair, Calibrate, maintain, troubleshoot and provide technical assistance for equipment malfunctions	195	70	35	50	350	30
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	280	200	75	100	655	70

Elective: 1 Anesthesiology equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5618.Facilitate Biomedical Instrumentation Services for Anesthesiology equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 2 Pain Management equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5619.Facilitate Biomedical Instrumentation Services for Pain Management equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 3 Cardiovascular equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5620.Facilitate Biomedical Instrumentation Services for Cardiovascular equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 4 Dental equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5621.Facilitate Biomedical Instrumentation Services for Dental equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 5 Ear, Nose, Throat (ENT) equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5622.Facilitate Biomedical Instrumentation Services for Ear, Nose, Throat (ENT) equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 6 Gastroenterological equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5623.Facilitate Biomedical Instrumentation Services for Gastroenterological equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 7 Urological equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5624.Facilitate Biomedical Instrumentation Services for Urological equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 8 General Hospital equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5625.Facilitate Biomedical Instrumentation Services for General Hospital equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 9 Operation Theatre (OT) equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5626.Facilitate Biomedical Instrumentation Services for Operation Theatre (OT) equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 10 Respiratory equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5627.Facilitate Biomedical Instrumentation Services for Respiratory equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 11 Neurological equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5628.Facilitate Biomedical Instrumentation Services for Neurological equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 12 Personnel use equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5629.Facilitate Biomedical Instrumentation Services for Personnel use equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 13 Obstetrical and Gynaecological (OG) equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5630.Facilitate Biomedical Instrumentation Services for Obstetrical and Gynaecological (OG) equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 14 Ophthalmic equipment and devices

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5631.Facilitate Biomedical Instrumentation Services for Ophthalmic equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 15 Rehabilitation equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5632.Facilitate Biomedical Instrumentation Services for Rehabilitation equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 16 Physical support equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5633.Facilitate Biomedical Instrumentation Services for Physical support equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 17 Interventional and Radiology equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5634.Facilitate Biomedical Instrumentation Services for Interventional and Radiology equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 18 Rheumatology equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5635.Facilitate Biomedical Instrumentation Services for Rheumatology equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 19 Dermatology and Plastic Surgery equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5636.Facilitate Biomedical Instrumentation Services for Dermatology and Plastic Surgery equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 20 Paediatric and Neonatology Medical equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5637.Facilitate Biomedical Instrumentation Services for Paediatric and Neonatology Medical equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 21 Oncology equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5638.Facilitate Biomedical Instrumentation Services for Oncology equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 22 Radiotherapy equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5639.Facilitate Biomedical Instrumentation Services for Radiotherapy equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 23 Nephrology and Renal care equipment and devices

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5640.Facilitate Biomedical Instrumentation Services for Nephrology and Renal care equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 24 In-Vitro Diagnostics Devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5641.Facilitate Biomedical Instrumentation Services for In-Vitro Diagnostics (IVD) devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 25 Ambulance Equipment and Devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5642.Facilitate Biomedical Instrumentation Services for Ambulance Equipment and Devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 26 Medical Software

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5643.Facilitate Biomedical Instrumentation Services for medical software	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 27 CSSD equipment and devices

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N5644.Facilitate Biomedical Instrumentation Services for CSSD equipment and devices	70	100	75	100	345	30
Total	70	100	75	100	345	30

Elective: 28 PSA Based Oxygen plants & Medical Gas Pipeline Systems

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
HSS/N0929.Facilitate Biomedical Instrumentation Services for PSA Based Oxygen plants & Medical Gas Pipeline Systems	70	100	75	100	345	30
Total	70	100	75	100	345	30

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.