BSBWH509
Assist with Workplace Monitoring Processes

Student Study Guide
Acoustar and Noise Measurement Services Pty Ltd is a registered training organization (RTO Registration Identifier Code 41013) under the Australian Skills Quality Authority (ASQA) providing BSB41415 Certificate IV Work Health and Safety qualification and MSS11 Sustainability Training Package (noise and noise management) units of competency.

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WELCOME!

The Acoustar course content is designed to be easy to understand. We provide practical work with theory to give a rounded understanding of a particular topic. Your trainers are practical people who work in industry and show you how to promote best practice in the workplace and avoid pitfalls in legislation, codes of practice and workplace guidelines.

Our projects relate to your work, and we guide you through each assignment so the key issues become clear and can be used in your workplace. Our study guides allow an easy progression from identifying basic issues to assessing complex solutions.

STUDY GUIDE

Your study guide has been carefully developed and customised for this unit of competency. Read and research the following information carefully. It is important not to limit your research to the sources provided.

Course reading (directed by trainer)
The following material is provided under Licence from the SafetyLine Institute, WorkSafe Australia. Students are permitted to store a copy of each document on their computer and are permitted to print the document. A Class Set is available from the Acoustar Library.

Element 1 - Assist with selecting measuring devices
  - General Duty of Care – Part 1
  - General Duty of Care – Part 2
  - Health and Safety Committees
  - Health and Safety Representatives
  - Introduction to Toxicology
  - Toxicology - Routes of Exposure

Element 2 - Assist with preparations to collect workplace information and data
  - General WHS Information Sources
  - Safety Data Sheets
  - Hazardous Substances Management – Introduction
  - Hygiene Surveys
  - Hazards and Risks of Confined Spaces
  - Safe Work in Confined Spaces
Element 3 - Assist with collecting workplace information and data
- Sampling of Airborne Particulates
- Basic Sampling of Gases and Vapours

Noise Extension
- Basic Acoustics
- Analysis of Sound Waves
- The Hearing Mechanism
- Causes of Hearing Damage
- Noise Control Management

Vibration Extension
- Human Vibration: Basic Characteristics
- Identification of Whole-Body Vibration
- Whole Body Vibration - Assessment and Control

Dust Hazards Extension
- Introduction to Occupational Lung Diseases
- Pneumoconiosis
- Respiratory Illness and Work

Program Reading (Acoustar Library)
Managing Occupational Health and Safety, A Multidisciplinary Approach
  Chapter 6 Case study: working hours and health; page 277
  Chapter 9 Worker communication and involvement in occupational health and safety; page 469
  Chapter 10 Approaches to managing occupational health and safety; page 516

Program recommended reading - WHS (not included)
- Returning injured employees to work – A review of current strategies and concerns, Safety Management vol. 53, no. 6, p. 63-68 by Bose, HA 2008
- Readiness for return to work following injury or illness: Conceptualizing the interpersonal impact of health care, workplace, and insurance factors, Journal of Occupational Rehabilitation vol. 12, no. 4, p. 233-256 by Franche, R-L and Krause, N 2002
- Institute of Work & Health 2007, Seven ‘Principles’ for Successful Return to Work
• Workers’ compensation case management strategies, Workplace Health & Safety vol. 43, no. 5, p. 245-250 by Martin, KJ 1995
• Safe Work Australia 2011, Comparison of Workers’ Compensation Arrangements in Australia and New Zealand
• Safe Work Australia 2011, How to Manage Work Health and Safety Risk – Code of Practice
• Safe Work Australia 2012, Incident Notification – Legislative Fact Sheet Series,
• Heads of Workers’ Compensation Authorities – Australia and New Zealand
• NT WorkSafe
• RiskCover – Insurance Commission of Western Australia
• WorkCover/ WorkSafe ACT
• WorkCover Authority of New South Wales
• WorkCover Queensland
• WorkCover SA
• WorkCover Tasmania
• WorkCover WA
• WorkSafe Victoria
• World Health Organization (WHO) website: www.who.int/en and Safe Work Australia website: http://hsis.safeworkaustralia.gov.au
• For the WHO, a search of the Environmental Health Criteria series of publications may be a good starting point: www.who.int/ipcs/publications/ehc/en

Websites
Each WHS jurisdiction in Australia has an internet site to allow easy access to relevant WHS legislation and information. In some jurisdictions mining and petroleum safety is administered by a separate government authority, each with its own website. Other helpful websites are:

• www.safeworkaustralia.gov.au – Safe Work Australia: national government work health and safety body
• www.comcare.gov.au – Commonwealth workplace safety, rehabilitation and compensation Regulator
• www.amsa.gov.au – Australian Maritime Safety Authority – maritime safety Regulator
• www.arpansa.gov.au – Australian Radiation Protection and Nuclear Safety Agency - nuclear and radiation safety Regulator
• www.atsb.gov.au – National Independent Transport Accident Investigator - air safety, rail safety and marine safety investigation
• www.nopsa.gov.au – National offshore petroleum safety authority – oil and gas safety Regulator
• www.austlii.edu.au – Australian Legal Information Institute for Commonwealth, state and territory work health and safety acts and regulations
• www.standards.com.au – The Australian standards organisation
• www.saiglobal.com – For copies of Australian and international standards and codes
• ohs.anu.edu.au – Australian National University’s National Research Centre for OHS Regulation
STUDYING

Your Study materials consist of a set of documents:

- This Study Guide
- Reading materials
- The assessment tasks; and
- A face-to-face tutorial program

The training program is arranged over a tutorial program and assessment tasks to be completed. A trainer-assessor will be assigned to you to help you through the program. The program is weighted towards practical work. Theory and background readings will be made available.

The assessment tasks are in three groups:

- Learning the knowledge underpinning the real-world building, environmental and workplace acoustics and noise control. The assessment tasks will be discussed briefly in the tutorials and are completed at home.
- Case scenarios dealing with real-world situations.
- Practical assessments that are the heart of the training program. These are done at home.

The unit is based on a minimum of 40 hours tutorial and at-home / work related activity for a person without prior knowledge. A person with prior knowledge may complete the unit in less time.

There are strict rules governing study and factual evidence of your work. Please read your assessment questions carefully.

The next section presents an overview to the content and structure of the course.
BSBWH409

Overview
Slide 1

BSBWHS409
Assist with
workplace
monitoring process

Slide 2

Element 1.
Assist with selecting
measuring devices

Slide 3

Australian organisations must comply with relevant:
- legislation: state/territory and federal legislation may apply
- regulations: these provide specific information and guidance material
- codes of practice: these give specific advice and suggestions for monitoring agents and conditions.
Slide 4

- Australian and international standards may either define specific requirements or provide guidance material that describes how to meet monitoring requirements.

Slide 5

- WHS monitoring begins with identifying the agents and conditions that may lead to serious WHS incidents.

Slide 6

- What standards are used in noise measuring?
Potential for harm

- Biological hazard
- Electricity
- Fibre, dust, particles
- Fumes, gases, vapours
- Heat and humidity
- Light
- Noise
- Radiation
- Vibration

Slide 7

Slide 8

- **Consult** with
  - managers
  - supervisors
  - employees

  To understand the impact of agents and conditions and how they should be monitored.

Slide 9

- Agents may be:
  - ingested
  - inhaled
  - injected
  - absorbed
Slide 10

- The environment can modify the effect of agents such as:
  - fibres
  - dust
  - biological agents
  - radiation

Slide 11

- Effective monitoring requires a detailed understanding of the workplace process, including:
  - process elements
  - movement through an area
  - the nature of the agents and conditions
Slide 13

- Choose the monitoring location carefully, so that the results accurately reflect the hazard. Consider:
  - location
  - area or space available
  - movements of people or equipment
  - number of people
  - physical features of equipment
  - work processes
  - related factors

Slide 14

- Choose monitoring equipment that is suited to the agent or condition. Equipment may test:
  - atmosphere:
    - gas monitoring, biological monitoring, particle monitoring
  - electrical current:
    - conduction, presence of cables
  - temperature:
    - ambient temperature, humidity
  - light:
    - light output from a source or over an area
  - noise:
    - decibels produced
  - vibration:
    - intensity and speed of movement

Slide 15

- Data is usually presented numerically. You may be required to analyse monitoring information to determine whether it is within acceptable limits.

- Select measuring equipment that can be calibrated to suit the monitoring requirement.

- Recalibrate equipment regularly to maintain accuracy.
Slide 16

- Agents or conditions
- Measuring equipment
- Workplace policy
- Law
- Health

Slide 17

- Use workplace policy and procedure documents to guide you when selecting monitoring equipment.
- Ensure the equipment does not compromise the safety of the work process.

Slide 18

- Seek appropriate expertise to help you:
  - identify what needs monitoring
  - understand agents and conditions
  - choose appropriate equipment.
Slide 19

- Consult both internal and external specialists for support, including:
  - employees and process experts
  - management and supervisors
  - workplace health and safety personnel
  - suppliers of equipment and chemicals
  - relevant consultants and technical experts.

Slide 20

- Equipment suppliers can provide advice about:
  - operating machinery correctly
  - calibrating machinery
  - interpreting data.

Slide 21

Element 2
Assist with preparations to collect workplace information and data
Slide 22
- Define the sampling process before monitoring data.

Slide 23
- The sampling process must take into account:
  - process, substance or hazard events
  - type of exposure
  - size of the workforce
  - financial considerations
  - practical considerations.

Slide 24
- Samples must be representative of the relevant process.
Sampling plans should consider:
  - workplace conditions
  - personnel
  - timing
  - location
  - presentation

Choose the most appropriate sampling method:
  - **Grab sampling**: randomly taking a number of samples at one time
  - **Longitudinal sampling**: sampling over an extended time period
  - **Continuous sampling**: ongoing sampling over a set period
  - **Judgmental sampling**: sampling undertaken because of someone’s judgement
  - **Representative sampling**: using sampling from one location to assess other locations

Sampling plans define how sampling will occur. Include all relevant information on the sampling plan, such as:
  - location of sampling
  - sampling method
  - dates and times
  - resources required
  - additional information
  - Consult with stakeholders before finalising the sampling plan. This helps identify issues and concerns before the monitoring takes place.
Monitoring equipment must be working correctly to take accurate measurements.

Consult the operating processes and/or user manuals to check basic operation.

Calibrate machinery before conducting measurements. Refer to the National Association of Testing authority (NATA) if necessary.

Use a test run with known data to check that the machine and any accessories are functioning correctly.

- Calibration involves comparing an established standard to the recording device and adjusting the device until it matches the standard.
- Calibrating machinery involves:
  - researching what is required
  - making appropriate calculations
  - adjusting and operating the machines
  - interpreting data
  - following procedures.
Slide 31

- Choose a scale appropriate to the agent or condition being measured.
- Match the calibration scale to that of the machine being used.
- Test machines and equipment after calibration and before their first use.
- This identifies potential issues and increases the reliability of monitoring data.

Slide 32

- Benefits of testing machines and equipment include:
  - training staff
  - adjusting processes
  - identifying safety or training issues
  - developing internal documentation

Slide 33

- Simulate the operating environment when conducting tests.
- Ensure all affected personnel are aware of the tests and take necessary precautions.
- Data must be accurate to be useful.
- To increase reliability, follow the sampling process in the sampling plan when collecting data.
slide 34

- Practise using the measuring device before collecting data.
- Data will only be accurate if the machine is used correctly.
- Locate the measuring device in the best place to collect reliable, representative data.
- It must also be safe for workers in the area.

slide 35

- Research the risks and hazards associated with the work processes being measured.
- Ensure you take all necessary precautions for working and measuring in this environment.
- Conduct a risk assessment of the data collection process to ensure any risks and hazards are properly controlled.

slide 36

- Check that the measuring process does not create any additional risks and hazards. Controls may include:
  - locating the machinery out of traffic areas
  - installing guards around the machinery
  - communicating with workers and others about the process.
• Data is collected to inform decision-making about WHS and work practices.
• Record the data in a format that support analysis, such as:
  – a database
  – electronic records
  – a log book.

• Record any relevant information that may influence the result, such as:
  – temperature
  – environmental conditions
  – distance from the agent or condition
  – time and date.

• Clean recording devices after they have been used.
• Machinery documentation will specify the:
  – frequency of cleaning: after each use or after set periods
  – cleaning method: wiping to remove dust, sterilising or using specific products.
Some components of measuring devices may be disposable.
Consult machinery documentation to identify:
- disposal frequency: after each use or after set periods
- disposal method: general rubbish, recycling or as hazardous waste.

Store measuring devices to protect them from dust or other damage.
You may use custom storage or designate part of an existing storage area.
Consult user manuals for advice on how to store devices.

When choosing a storage location, consider:
- frequency of use
- sensitivity of equipment
- size of equipment.

Store equipment so that it is ready for use.
Some equipment may need to be calibrated before it is used again after being in storage.
Element 4
Assist with documenting and evaluating results of monitoring

- Monitoring data must be evaluated and analysed before it can be used effectively.
- Evaluation involves comparing data against:
  - relevant standards
  - established targets
  - data from previous periods
  - data from benchmark organisations.

Documenting the results of analysis helps to share the findings and retain it for comparison with future data.
- Record data so that it is:
  - secure: any sensitive data must be properly protected with passwords, encryption or physical locks
  - accessible: data must be available to those who are authorised to use and review it.
When creating reports of analysis, consider the:
- rationale
- context
- information source
- target audience.

Research the purpose of the report carefully to ensure all requirements are met.

You may need to address:
- regulatory requirements
- audit requirements
- funding requirements.

Tailor the report to suit the target audience. You should research the specific requirements and preferences of the audience.

Report audiences may include:
- designers and engineers
- management
- health and safety representatives and committees
- WHS professionals
- regulatory bodies.
Present information in a format that suits the audience.

Use clear, simple English and minimise technical jargon.

You may need to adjust the language to suit the audience.

Reports commonly include:
- a summary
- an introduction
- relevant subject headings
- recommendations
- a conclusion.

Present data and results in a format that is easy to understand. Remember it is a communication device.

Consider:
- tables
- charts

Store reports so that they are secure, accessible, compliant.

Security applies to both hard-copy and digital data storage.

The Privacy Act 1988 (Cth) requires that personal data must be appropriately secured.

Security may involve:
- physical locks
- passwords
- encryption.
Legislation may stipulate a minimum period for retaining monitoring data. Ensure that these requirements are met when storing information.

Underpinning knowledge Questions 3.1
- Part A Q 1-5
- Part B Q1-4

Case Study
- Part C Q1-10

Practical assessment
- Deliver a section on monitoring. Use the case study as the example.
BSBWH509
Assist with workplace monitoring processes

This section of BSBWH509 reviews noise and vibration monitoring processes in the workplace and expands the standard training program into practical noise management.

DEFINITIONS

Sound: Vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear.

Noise: Unwanted sound

1. Assisting with selecting measuring devices

- Effective monitoring requires a detailed understanding of the workplace process, including:
  - process elements
  - movement through an area
  - the nature of the agents and conditions

- Choose the monitoring location carefully, so that the results accurately reflect the hazard. Consider:
  - location
  - area or space available
  - movements of people or equipment
  - number of people
  - physical features of equipment
  - work processes
  - related factors

- Choose monitoring equipment that is suited to the agent or condition.
  - Class 1 or Class 2 sound level meters
  - Class 1 or Class 2 personal sound exposure meters
  - Vibration meter to suit task
  - Ground-borne vibration
  - Structure borne vibration
  - Hand-Arm vibration
  - Whole body vibration

- Data is presented
  - Numerically: tables
  - Visually: Graphically in 2D or 3D figures, plates
  - With audio
You are required to analyse monitoring information to determine whether it is within acceptable limits.

What are “acceptable limits” that have to be observed in a monitoring program?
See next section

Select measuring equipment that can be calibrated to suit the monitoring requirement.
Recalibrate equipment regularly to maintain accuracy.
Use workplace policy and procedure documents to guide you when selecting monitoring equipment.
Ensure the equipment does not compromise the safety of the work process.
Seek appropriate expertise to help you:
- identify what needs monitoring
- understand agents and conditions
- choose appropriate equipment.

Consult both internal and external specialists for support, including:
- employees and process experts
- management and supervisors
- workplace health and safety personnel
- suppliers of equipment
- relevant consultants and technical experts.

Equipment suppliers can provide advice about:
- operating machinery correctly
- calibrating machinery
- interpreting data.

2. Assisting with preparations to collect workplace information and data

Australian organisations must comply with relevant:
- legislation: state/territory and federal legislation apply
- regulations: these provide specific information and guidance material
- Standards
- codes of practice
- Guides or manuals referred to in legislation

Australian and international standards may either define specific requirements or provide guidance material that describes how to meet monitoring requirements, e.g.
- AS1269. -2005, Parts 1, 2, 3 and 4 Occupational Noise Management
- AS1055. -1997, Parts 1, 2 and 3 Acoustics
- ISO, British Standards for Whole body and Hand-Arm vibration
- Use all available information to help define the measuring process.
- The measuring process is influenced by:
  - Legislation
  - Regulations
  - Guidance material
  - Standards
  - Checklists

**A well defined sampling process is essential**

- Define the sampling process before monitoring / collecting data.
- The sampling process must take into account:
  - Sound / vibration emission within the workplace
  - Sound / vibration emission from the workplace to neighbours
  - Process or hazard events
  - Type of exposure
  - Size of the exposed workforce

- Samples must be representative of the relevant processes.
- Choose the most appropriate sampling method:
  - Grab sampling: randomly taking a number of samples at one time
  - Longitudinal sampling: sampling over an extended time period
  - Continuous sampling: ongoing sampling over a set period
  - Judgmental sampling: sampling undertaken because of someone’s judgement
  - Representative sampling: using sampling from one location to assess other locations

- Consider how data will be used and analysed before collecting it. This helps ensure all requirements are met:
  - Uncertainty
  - Atypical values

- Sampling plans define how sampling will occur.
- Create a record of the sampling plan using an organisational template or creating your own document.
- Include all relevant information on the sampling plan, such as:
  - Location of sampling
  - Sampling method
  - Dates and times
  - Resources required
  - Additional information

- To increase reliability, follow the sampling process in the sampling plan when collecting data.
Consult with stakeholders before finalising the sampling plan. This helps identify issues and concerns before the monitoring takes place.

Monitoring equipment must be working correctly to take accurate measurements.

Consult the operating processes and/or user manuals to check basic operation.

**Calibration**

- Calibrate instruments before conducting measurements.
- Use a test run with known data to check that the instrument and any accessories are functioning correctly.
- Consult instrumentation manufacturer for advice on checking and calibrating instruments.
- Calibration involves comparing an established standard to the instrumentation / machinery and adjusting the device until it matches the requirements of the standard.
- Calibrating instrumentation and machinery involves:
  - researching what is required
  - making appropriate calculations
  - adjusting and operating the instruments
  - interpreting data
  - following procedures.

- Choose a scale appropriate to the agent or condition being measured.
- Match the calibration scale to that of the machine / device being used.
- Test machines and equipment after calibration and before their first use.
- Practise using the calibrating instrumentation and machine / device before collecting data.
- Data will only be accurate if the calibrating instrumentation and machine / device are used correctly.
- Check calibration and clean recording devices after they have been used.

3. **Assisting with collecting workplace information and data**

- Conduct a risk assessment of the data collection process to ensure any risks and hazards are properly controlled.
- Research the risks and hazards associated with the work processes being measured.
- Ensure you take all necessary precautions for working and measuring in this environment.

- Check that the measuring process does not create any additional risks and hazards. Controls may include:
  - locating the machinery out of traffic areas
  - installing guards around the machinery
  - communicating with workers and others about the process.

- Locate the measuring device in the best place to collect reliable, representative data.
- This identifies potential issues and increases the reliability of monitoring data.
Benefits of testing machines and equipment include:
- training staff
- adjusting processes
- identifying safety or training issues
- developing internal documentation

Simulate the operating environment when conducting tests.
Ensure all affected personnel are aware of the tests and take necessary precautions.
Data must be accurate to be useful.
Data is collected to inform decision-making about WHS and work practices.
Record the data in a format that support analysis, such as:
- a database
- electronic records
- a log book.

Record any relevant information that may influence the result, such as:
- temperature
- environmental conditions
- distance from the agent or condition
- time and date.

Consider using additional expertise when recording and collecting data.
This advice may come from:
- suppliers of recording devices
- users of the monitoring data
- personnel with analysis expertise.

Store measuring devices to protect them from rain, vermin or other damage.
You may use custom storage or designate part of an existing storage area.
Consult user manuals for advice on how to store devices.
When choosing a storage location, consider:
- frequency of use
- sensitivity of equipment
- size of equipment.

Store equipment so that it is ready for use.
Some equipment may need to be calibrated before it is used again after being in storage.

4. Assisting with documenting and evaluating monitoring results

Monitoring data must be evaluated and analysed before it can be used effectively.
Evaluation involves comparing data against:
- relevant standards
- established targets
- data from previous periods
- data from benchmark organisations.

- Documenting the results of analysis helps to share the findings and retain it for comparison with future data.

- Record data so that it is:
  - secure: any sensitive data must be properly protected with passwords, encryption or physical locks
  - accessible: data must be available to those who are authorised to use and review it.

- When creating reports of analysis, consider the:
  - rationale
  - context
  - information source
  - target audience.

- Research the purpose of the report carefully to ensure all requirements are met.

- You will need to address:
  - regulatory requirements
  - measurement requirements
  - code / guideline requirements.

- Tailor the report to suit the target audience. You should research the specific requirements and preferences of the audience.

- Report audiences may include:
  - designers and engineers
  - management
  - health and safety representatives and committees
  - WHS professionals
  - regulatory bodies.

- Present information in a format that suits the audience.

- Use clear, simple English and minimise technical jargon.

- You may need to adjust the language to suit the audience.

- Reports commonly include:
  - a summary
  - an introduction
  - relevant subject headings
  - recommendations
  - a conclusion.

- Present data and results in a format that is easy to understand.
Consider:
- tables
- charts
- summaries

Store reports so that they are:
- secure
- accessible
- compliant with organisational and legislative requirements.

Security applies to both hard-copy and digital data storage.

The *Privacy Act 1988 (Cth)* requires that personal data must be appropriately secured.
- Audio data

Security may involve:
- physical locks
- passwords
- encryption.

Ensure that privacy requirements are met when storing information.
BSBWHS409

Course Content
COURSE CONTENT

This Study Guide describes the performance outcomes, skills and knowledge required to implement an organisation’s continuous improvement systems and processes. Particular emphasis is on using systems and strategies to actively encourage your participation in the process, monitoring and reviewing performance, and identifying opportunities for further improvements.

The BSB07 Business Services Training Package was developed by the Innovation and Business Skills Australia Industry Skills Council in consultation with industry stakeholders including employers, unions, peak bodies, professional associations, regulatory bodies, registered training organisations (RTOs) and other relevant parties. The training package specifies the skills and knowledge required to perform effectively in the workplace.

Individual units of competency are nationally agreed statements that describe work outcomes and can stand alone when applied in the workplace.

Q. What is ‘competency’?

A. Competency means the consistent application of knowledge and skill to the standard of performance required in the workplace. It embodies the ability to transfer and apply skills and knowledge to new situations and environments.

Every job requires a specific set of knowledge and skills and this varies depending on the type and complexity of the job. Competency assessment is about providing a way of building the skills and knowledge people need to perform a job. It is a combination of work practice and knowledge learned through training programs or own study.

To be competent in a task you must have the necessary skills and knowledge to do so. This is the purpose of our training program.

This unit applies to those with responsibility for a specific area of work or who lead a work group or team. It addresses the knowledge, processes and techniques necessary to implement and monitor environmentally sustainable work practices, including the development of processes and tools, such as:

- identifying areas for improvement
- developing plans to make improvements
- implementing and monitoring improvements in environmental performance.

A person who demonstrates competence in this unit must be able to provide evidence of the ability to implement and monitor integrated environmental and resource efficiency management policies and procedures within an organisation. Evidence must be strictly relevant to the particular workplace role.
Elements and Performance Criteria

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

<table>
<thead>
<tr>
<th>Element</th>
<th>Performance Criteria</th>
</tr>
</thead>
</table>
| 1. Assist with selecting measuring devices | 1.1 Assist with identifying regulatory requirements and standards that apply to monitoring  
1.2 Identify agent and/or condition to be measured through consultation with relevant individuals and parties  
1.3 Identify characteristics of agent and/or condition  
1.4 Determine the area where measurements are to be taken  
1.5 Assist with identifying types of appropriate measuring equipment  
1.6 Assist with the selection of measuring equipment appropriate to the agent and/or condition, the environment, the activities being carried out and the level of risk  
1.7 Recognise limits of own expertise and available equipment, and seek expert advice and equipment as appropriate |
| 2. Assist with preparations to collect workplace information and data | 2.1 Determine a sampling process  
2.2 Consult with and advise those involved in workplace activities to collect information and data about the requirements, and nature and purpose of the monitoring  
2.3 Assist with defining a sampling plan after inspecting area and consulting with workers and affected parties about the nature of the problem  
2.4 Assist with checking the operability of equipment |
| 3. Assist with collecting workplace information and data | 3.1 Assist with selecting and calibrating monitoring equipment, and selecting appropriate scale  
3.2 Assist with tests  
3.3 Assist with correct use and maintenance of equipment to collect information and data  
3.4 Ensure own health and safety while collecting information and data, and record readings using expert support and advice as appropriate  
3.5 Assist with dismantling and cleaning equipment and parts, or dispose of appropriately |
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>3.6</strong></td>
<td>Assist with correctly storing equipment or making it ready for re-use as appropriate</td>
</tr>
</tbody>
</table>
| **4. Assist with documenting and evaluating results of monitoring** | **4.1** Assist with interpreting and evaluating results against a recognised standard and documenting results  
**4.2** Assist with preparing reports on the monitoring process, including any regulatory requirements, and consider purposes of report and the target audiences  
**4.3** Assist with presenting required information and data clearly and logically  
**4.4** Assist with retaining results and records in a format that enables them to be readily retrieved according to regulatory requirements and standards |
Definitions to assist in understanding the Performance Criteria

| Regulatory requirements and standards | Australian and international standards, such as those produced by Standards Australia and Safe Work Australia  
| | biological exposure indices  
| | commonwealth and state or territory WHS Acts, regulations and codes of practice  
| | exposure standards for atmospheric contaminants in occupational environments  
| | guidance material, such as guidance notes, guides, fact sheets and technical reports that provide practical guidance and directions for hazard identification, risk assessment and risk controls  
| | safety data sheets (SDS) for hazardous chemicals. |

| Agent and/or condition | biological agents, such as insects, mites and bacteria  
| | electricity  
| | fibres, dusts and particulates  
| | fumes, mists, gases and vapours  
| | heat and humidity  
| | light  
| | noise  
| | radiation, including ionising, non-ionising and laser  
| | vibration. |

| Individuals and parties | contractors and subcontractors  
| | duty holders as specified in WHS Acts:  
| | PCBU’s or their officers  
| | workers  
| | other persons at a workplace  
| | health and safety committees  
| | health and safety representatives  
| | suppliers  
| | WHS entry permit holders  
| | WHS inspectors  
| | WHS regulators  
| | WHS specialists, such as occupational hygienists or occupational physicians. |

| Characteristics | dose factors relating to concentration and time  
| | how an agent affects specific parts of the body, such as:  
| | extent of damage to tissue  
| | effects, such as additive, antagonistic, synergism and potentiation  
| | how an agent can affect WHS  
| | how an agent is absorbed into the body |
- way an agent behaves in the environment, including over distance and time  
- work environments, such as confined spaces.

### Determining the area

- area or space available  
- location  
- movements of people and equipment  
- number of persons occupying area  
- other factors that may impact on the sampling or data-collection processes  
- physical features of equipment, such as emitting sources  
- tasks or activities being undertaken.

### Sampling process

- process, substance or hazard likely to be causing the ill-health or symptoms  
- size of the workforce (i.e. individual worker or work teams)  
- type of exposure  
- other practical and financial considerations.

### Information and data collected

- conditions, such as activities and number of people present when measurements were made  
- date, time and duration of collection  
- locations where information and data were collected  
- readouts and measurements taken  
- sampling method, for example:  
  - continuous  
  - grab  
  - longitudinal  
- specifications of equipment used.

### Operability of equipment

- availability of appropriate attachments, leads and filters  
- battery serviceability checks  
- check and function tests  
- calibration requirements  
- National Association of Testing Authorities (NATA) tested and certified, with certificate of currency as appropriate.

### Purposes of report

- as a basis for design of improved and/or new risk controls  
- communicating the results and ramifications of monitoring to individuals and parties  
- hazard identification  
- legal compliance  
- risk assessment.
| **Target audiences** may include: | • contractors, such as hygienists, involved in sampling methodologies and procedures  
• designers and engineers  
• individuals and parties. |
| --- | --- |
| **Required information and data** may include: | • agent/condition being monitored and key issues associated with it  
• interpretation and discussion of results  
• ramifications for workers and the workplace  
• sampling process:  
  ➢ conditions at time of sampling, including whether or not the sampling period represented normal operating conditions  
  ➢ how measurements were taken  
  ➢ locations where samples were taken  
  ➢ specifications of equipment used  
• tables of results  
• target audiences for report  
• where, when and why measurements were taken. |
What skills and knowledge do I need to demonstrate?

**Skill set**

Every job requires a specific set of skills and knowledge and this varies depending on the type and complexity of the job. Competency assessment is about providing a way of building the skills and knowledge people need to perform a job. It is a combination of work practice and knowledge learned through training programs or own study.

**Improved skills & knowledge – improved performance capability**

The key to competency assessment is that it is based on actual skills and knowledge that a person can demonstrate in the workplace or other contexts. In this unit the competencies are benchmarked against a pre-set of performance criteria.

These are described the section “Elements and Performance Criteria” This is different to other approaches where there is no requirement to demonstrate knowledge and skills – like approaches where people just answer questions as a test of their general or specific knowledge and skills.

The problem with testing is that it doesn’t guarantee that a person will be able to do something – it just verifies that they know something. To assist you our approach is:

- Assess yourself against a set of competencies.
- Compile a list of evidence that shows your level of competency.
- Identify your development needs.
- Study the assessment questions (“Learning”) and work through the Project (“Understanding, Skill and Application of Knowledge”)
- Send your completed Project to your Trainer / Assessor for Assessment. You are awarded competence in this Unit if you can demonstrate the required level of skills and knowledge.
## Foundation Skills

*This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Performance Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>1.1, 1.3</td>
<td>- Interprets and analyses complex legal organisational and technical texts relevant to monitoring</td>
</tr>
<tr>
<td>Writing</td>
<td>1.2, 4.2, 4.3, 4.4</td>
<td>- Uses appropriate structure, layout and language for reporting and recording information about WHS monitoring</td>
</tr>
<tr>
<td>Oral communication</td>
<td>1.2, 1.7, 2.2, 2.3, 3.4</td>
<td>- Uses structure and language suitable for audience to present or seek information about monitoring</td>
</tr>
</tbody>
</table>
| Numeracy               | 3.1, 3.2, 3.3, 4.1, 4.3 | - Selects and flexibly uses a range of tools, hand-held devices, computers and technological processes to perform calculations  
- Collects, represents, summarises and interprets a range of statistical data appropriately  
- Uses a range of informal and formal oral and written mathematical language and symbols to communicate mathematically |
| Navigate the world of work | 1.1, 4.1, 4.2 | - Takes responsibility for adherence to legal and regulatory responsibilities in relation to WHS role and responsibilities  
- Keeps up to date on changes to WHS legislation or regulations |
| Interact with others   | 1.1,1.2, 1.7, 2.2, 2.3, 3.2, 3.3, 3.4, 3.5, 3.6, 4.2, 4.3, 4.4 | - Understands what to communicate, with whom and how in context of WHS monitoring  
- Cooperates with others as part of WHS monitoring processes, and contributes to specific activities requiring joint responsibility and accountability  
- Collaborates with others to achieve individual and team outcomes  
- Offers assistance and shares information and resources voluntarily |
<p>| Get the work done      | 1.4, 1.5, 1.6, 1.7, 2.1, 2.3, 2.4, 3.1, 4.1, 4.2, 4.3, 4.4 | - With assistance, determines priorities and sequences the steps in clearly defined tasks and identifies and assembles the resources required in relation to |</p>
<table>
<thead>
<tr>
<th>Planning for WHS monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Uses formal decision making processes, setting or clarifying goals, gathering information and identifying and evaluating choices against a set of criteria</td>
</tr>
<tr>
<td>▪ Uses familiar digital systems and tools to access, organise, analyse and display information relevant to role</td>
</tr>
<tr>
<td>▪ Manages and maintains files securely in appropriate storage media and formats to enable retrieval according to regulations and standards</td>
</tr>
</tbody>
</table>
The required performance and knowledge for this Unit

During the Assessment your Trainer will be looking for evidence that you have achieved the required performance and knowledge. For most items the evidence can be presented in your Project.

Performance Evidence

Evidence of the ability to assist with processes for monitoring physical agents and/or conditions including:

- identifying regulatory requirements and standards that apply to monitoring of physical agents and/or conditions relevant to work health and safety (WHS)
- identifying the context of measurements to be undertaken including:
  - which physical agents and/or conditions will be measured and their characteristics
  - where the measurements will be taken
  - area or space available
  - movements of people and equipment, tasks or activities being undertaken, number of persons occupying area and other factors that may impact on the sampling or data-collection processes
  - physical features of equipment, such as emitting sources
- preparing for and collecting workplace WHS data and information including:
  - selecting and calibrating appropriate equipment and selecting appropriate scale
  - defining a sampling process and plan
  - performing tests
  - correct preparation, use, maintenance, cleaning storage and if required disposal of equipment
- consultation and communication with individuals and parties about the requirements, purpose and nature of the monitoring
- interpreting and evaluating results of monitoring including calculations using appropriate units of measurement, logarithmic scales, decimals and order of magnitude relevant to making and interpreting measurements and measurement error
- preparing and presenting clear and logical reports that are appropriate to purpose of report and the target audience
- keeping records that meet regulatory requirements
- seek expert advice, support and equipment as required.
- ensure own safety during monitoring process.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.
Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- list typical physical agents and/or conditions relevant to WHS including:
  - biological agents, such as insects, mites and bacteria
  - electricity
  - fibres, dusts and particulates
  - fumes, mists, gases and vapours
  - heat and humidity
  - light
  - noise
  - radiation, including ionising, non-ionising and laser
  - vibration
- outline aspects of WHS Acts, regulations, codes of practice and standards that are relevant to measuring physical agents and/or conditions and how they apply to the organisation
- explain the mode of action of common physical, biological and chemical agents on the body and how they produce discomfort or harm
- list the characteristics, mode of action and units of measurement for major hazard types
- describe environmental conditions that impact on measurements
- explain types of measuring and monitoring equipment and techniques for correct and safe use including limitations on use and output, calibration, adjustment, maintenance and any in-built alarms.

Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced by individuals carrying out work health and safety duties in the workplace and include access to:

- measuring devices and equipment
- office equipment and resources
- relevant Acts, regulations, codes of practice, licensing requirements, standards
- case studies and, where possible, real situations
- interaction with others.
Skills self-assessment

Make a realistic assessment of your skills BEFORE starting the Unit. If you are unsure mark the Level as ‘Low’. Your trainer will use this assessment to help you complete the Unit.

<table>
<thead>
<tr>
<th>1. Assist with selecting measuring devices</th>
<th>Current Skill level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Assist with identifying regulatory requirements and standards that apply to monitoring</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.2 Identify agent and/or condition to be measured through consultation with relevant individuals and parties</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.3 Identify characteristics of agent and/or condition</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.4 Determine the area where measurements are to be taken</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.5 Assist with identifying types of appropriate measuring equipment</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.6 Assist with the selection of measuring equipment appropriate to the agent and/or condition the environment the activities being carried out and the level of risk</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>1.7 Recognise limits of own expertise and available equipment and seek expert advice and equipment as appropriate</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Assist with preparations to collect workplace information and data</th>
<th>Current Skill level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Determine a sampling process</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td>2.2 Consult with and advise those involved in workplace activities to collect information and data about the requirements and nature and purpose of the monitoring</td>
<td>◯ High ◯ Medium ◯ Low</td>
</tr>
<tr>
<td></td>
<td>2.3 Assist with defining a sampling plan after inspecting area and consulting with workers and affected parties about the nature of the problem</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td></td>
<td>2.4 Assist with checking the operability of equipment</td>
</tr>
<tr>
<td></td>
<td>3. Assist with collecting workplace information and data</td>
</tr>
<tr>
<td></td>
<td>3.1 Assist with selecting and calibrating monitoring equipment and selecting appropriate scale</td>
</tr>
<tr>
<td></td>
<td>3.2 Assist with tests</td>
</tr>
<tr>
<td></td>
<td>3.3 Assist with correct use and maintenance of equipment to collect information and data</td>
</tr>
<tr>
<td></td>
<td>3.4 Ensure own health and safety while collecting information and data and record readings using expert support and advice as appropriate</td>
</tr>
<tr>
<td></td>
<td>3.5 Assist with dismantling and cleaning equipment and parts or dispose of appropriately</td>
</tr>
<tr>
<td></td>
<td>3.6 Assist with correctly storing equipment or making it ready for re-use as appropriate</td>
</tr>
<tr>
<td></td>
<td>4. Assist with documenting and evaluating results of monitoring</td>
</tr>
<tr>
<td></td>
<td>4.1 Assist with interpreting and evaluating results against a recognised standard and documenting results</td>
</tr>
<tr>
<td></td>
<td>4.2 Assist with preparing reports on the monitoring process including any regulatory requirements and consider purposes of report and the target audiences</td>
</tr>
<tr>
<td>4.3 Assist with presenting required information and data clearly and logically</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>

| 4.4 Assist with retaining results and records in a format that enables them to be readily retrieved according to regulatory requirements and standards |  
|---|---|---|
| | High | Medium | Low |
What is evidence?

Evidence is a body of facts that proves or supports a belief or proposition to support your competency in this unit. An Assessment needs to contain evidence from your own work and understanding.

The rules of evidence are closely related to the principles of assessment and provide guidance on the collection of evidence to ensure:

- Validity
- Sufficiency
- Authenticity
- Currency

Validity
The assessor is assured that the learner has the skills, knowledge and attributes as described in the module or unit of competency and associated assessment requirements.

Sufficiency
The assessor is assured that the quality, quantity and relevance of the assessment evidence enables a judgment to be made of a learner’s competency.

Authenticity
The assessor is assured that the evidence presented for assessment is the learner’s own work.

Currency
The assessor is assured that the assessment evidence demonstrates current competency. This requires the assessment evidence to be from the present or the very recent past.

What evidence do I need to provide?

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, Range Statement and the Assessment Guidelines for the Unit.
# Evidence Guide

<table>
<thead>
<tr>
<th>Overview of assessment</th>
<th>Evidence of the following is essential:</th>
</tr>
</thead>
</table>
| Critical aspects for assessment and evidence required to demonstrate competency in this unit | • seeking advice and support when required  
• ensuring safety of self and others during monitoring process  
• assisting with the use of appropriate equipment to monitor selected agents and/or conditions in the workplace  
• knowledge of relevant Acts, regulations, codes of practice, associated standards and guidance material specific to measuring processes to identify hazards, assess risk and monitor the effectiveness of risk controls. |

<table>
<thead>
<tr>
<th>Context of and specific resources for assessment</th>
<th>Assessment must ensure access to:</th>
</tr>
</thead>
</table>
|                                                    | • a workplace or a simulated workplace with hazards requiring testing and monitoring  
• all measuring devices and equipment appropriate to the agent and/or condition  
• appropriate office and workplace equipment and resources  
• relevant legislation, standards and guidelines. |

<table>
<thead>
<tr>
<th>Method of assessment</th>
<th>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</th>
</tr>
</thead>
</table>
|                      | • analysis of responses to case studies and scenarios  
• explanation of techniques used to measure and monitor workplace hazards  
• direct questioning combined with review of portfolios of evidence and third-party reports of on-the-job performance by the candidate  
• oral or written questioning to assess knowledge of techniques for correctly using safe measuring and monitoring equipment  
• review of documented results  
• review of reports on testing undertaken  
• evaluation of equipment operability. |

<table>
<thead>
<tr>
<th>Guidance information for assessment</th>
<th>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <a href="#">BSBWH5404A</a> Contribute to WHS hazard identification, risk assessment and risk control.</td>
</tr>
</tbody>
</table>
What is an assessment?

Assessment is the process of checking your competence to perform to the standard detailed in each element’s performance criteria against a set of pre-determined benchmarks.

Principles of assessment
To ensure quality outcomes, assessment should be:

- Fairness
- Flexibility
- Validity
- Reliability

Fairness
The individual learner’s needs are considered in the assessment process. Where appropriate, reasonable adjustments are applied by the RTO to take into account the individual learner’s needs. The RTO informs the learner about the assessment process, and provides the learner with the opportunity to challenge the result of the assessment and be reassessed if necessary.

Flexibility
Assessment is flexible to the individual learner by:

- reflecting the learner’s needs;
- assessing competencies held by the learner no matter how or where they have been acquired; and
- drawing from a range of assessment methods and using those that are appropriate to the context, the unit of competency and associated assessment requirements, and the individual.

Validity
Any assessment decision of the RTO is justified, based on the evidence of performance of the individual learner. Validity requires:

- assessment against the unit/s of competency and the associated assessment requirements covers the broad range of skills and knowledge that are essential to competent performance;
- assessment of knowledge and skills is integrated with their practical application;
- assessment to be based on evidence that demonstrates that a learner could demonstrate these skills and knowledge in other similar situations; and
- judgment of competence is based on evidence of learner performance that is aligned to the unit/s of competency and associated assessment requirements.
Reliability
Evidence presented for assessment is consistently interpreted and assessment results are comparable irrespective of the assessor conducting the assessment.

How will I be assessed?

The assessment activities are in the Assessment Guide and designed to enable you to collect evidence for assessment and to assess your skills and knowledge.

Work through the activities. While the activities are listed separately they are designed to build up into an integrated project which is described at the end of the assessment guide.

You should clearly reference your work with full citations for any quotes or references, and list all materials that provided background information for completion of an activity.

While access to an actual workplace is desirable, part of the assessment may be through simulated project activity, scenarios, case studies, role-plays or actual activities.

The integrated project and presentation activity in each assessment guide provides you with an opportunity to consolidate your learning. Ideally the project will be an application of what you have learnt as applied to a workplace, thus providing evidence of your ability to transfer and apply skills and knowledge to new situations.

A mentor, or an appropriate third party familiar with your work, can help provide an independent evaluation of your ability to work consistently and effectively at the required level.

Underpinning Knowledge and Practical Assignments

This is where you show that you have achieved an acceptable level of competence in skills and knowledge for this Unit.

Confidentiality

When collecting material, please ensure that you protect the confidentiality of colleagues, workers and other persons, and block out any sensitive information.

All evidence and coursework you send to Acoustar will be treated in the strictest confidence by your Trainer / Assessor and not made available to any third party.
Assessments

There are three formal assessments:

1. Classwork and completing the Underpinning Knowledge questions with the help of others and your trainer
2. Completing the Case Scenarios in your own time but with the help of others and your trainer as needed
3. Completing the Practical Assessments in your own time and by yourself. You can ask your trainer for assistance.

In addition the Skills and Knowledge questions cover the range of topics in the Foundation Skills. These questions are in the ‘Underpinning Knowledge - Tutorials’ section.

Assessment Conditions

Information for assessors:

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance of typical activities experienced by individuals using interpersonal communication skills in the workplace and include access to:

- equipment, materials and business software packages for making a presentation
- business technology
- interaction with others.
BSBWH509
Underpinning Knowledge
Underpinning Knowledge

Instructions to the student

- Read all of the questions for this unit of competency before commencing.

- Answer all the questions for this unit of competency. Keep in mind you are studying a Nationally Recognised Certificate IV unit of competency.

- Your answers must reflect the depth of knowledge and understanding expected of a person who can work without supervision, and demonstrate a level of judgement and decision making.

- This assessment is to be conducted in a supervised classroom environment. Computers may be used for the purpose of presenting the answers in a neat and professional manner.

- You must complete all your own work without assistance from other persons and / or sources:
  - The assessor will take steps / make arrangements to ensure students do not share their work and / or answers
  - The assessor will predetermine the timeframe for the assessment and advise the students
  - The assessor will make arrangements to receive the completed assessment via email, USB, printed or similar

- Unless otherwise specified, your answers should be 100 to 250 words.

- All questions and tasks must be true and correct to be assessed as satisfactory.

- Complete the assessment sign off sheet with your assessor.
Underpinning Knowledge Questions

**Question 1**
Identify which part of Australian legislation contains most of the key sampling methods.

**Question 2**
Nominate five (5) regulatory requirements that apply to monitoring.

**Question 3**
What website would you access if you wished to purchase Australian Standards?

**Question 4**
Give five (5) examples of agents and / or conditions that may require monitoring.

**Question 5**
Identify two (2) persons you could consult with to identify the agent / condition to be measured.

**Question 6**
Identify four (4) basic characteristics of agents / conditions.

**Question 7**
Nominate the three (3) routes that chemicals generally enter the body.

**Question 8**
Name one (1) consequence of occupational Noise Induced Hearing Loss (ONIHL).

**Question 9**
Nominate three (3) factors that must be considered when determining the area where measurements will be taken.

**Question 10**
Identify the four (4) broad groups of measuring equipment.

**Question 11**
Nominate the three (3) factors that should be considered when selecting the most appropriate measuring equipment.

**Question 12**
Explain why consideration should be given to the environment when selecting the most appropriate measuring equipment.

**Question 13**
Identify what action you would take if you realised the monitoring requirements are beyond the limits of your own expertise.

**Question 14**
Identify three (3) factors that must be considered when determining the sampling process.
Question 15  
Nominate three (3) consultation tasks that must be completed before monitoring processes can begin.

Question 16  
Identify four (4) types of information and data that can be collected through consultation.

Question 17  
Nominate the two (2) tasks that must be completed before defining the sampling plan.

Question 18  
Identify six (6) factors the sampling plan will set out.

Question 19  
Nominate four (4) tasks that form part of checking the operability of equipment.

Question 20  
Explain why monitoring equipment should be calibrated before use.

Question 21  
Explain what is involved in the calibration of an air sampling pump.

Question 22  
Identify who should lead the sampling team.

Question 23  
Nominate how you can ensure monitoring equipment is used and maintained correctly.

Question 24  
Identify five (5) considerations that must be taken into account regarding your own health and safety during the monitoring process.

Question 25  
Explain the method used for sampling using detector / colorimetric tubes.

Question 26  
Identify the specific Australian Standard that details the methodology to be followed when conducting noise surveys.

Question 27  
Detail the method of using an integrating SLM to collect noise data.

Question 28  
Identify the precautions you would take when discarding detector / colorimetric tubes.

Question 29  
Identify where you can access information regarding the correct storage of equipment after use.
**Question 30**
Identify the formula used to calculate the time-weighted average (TWA).

**Question 31**
Identify the formula to calculate the dust concentration in air.

**Question 32**
Nominate three (3) reasons why occupational exposure standards do not represent fine lines between what is safe and what is dangerous to health.

**Question 33**
Nominate three (3) subjects you may be asked to write a report on, after monitoring processes have completed.

**Question 34**
Identify two (2) persons you may be required to write a report on monitoring processes for.

**Question 35**
Nominate four (4) pieces of information and data that should be included in a report on monitoring processes.

**Question 36**
Explain why it is necessary to present the required information and data clearly and logically.

**Question 37**
Nominate six (6) benefits to maintaining historical data and routine monitoring.

**Question 38**
Explain the rights of a worker who has monitoring equipment attached.

**Question 39**
Identify the three (3) stages in controlling hazards in the workplace.

**Question 40**
Nominate two (2) types of hazards that can be monitored using measuring devices.

**Question 41**
Within your own workplace explain the nature of the workplace processes, including work flow, planning and control, and nominate the hazards that are relevant to your workplace.

**Question 42**
Explain what a work permit is and how it applies to monitoring processes.
BSBWHS409 Noise and Vibration Questions

1. Not every noise or vibration condition has an exposure standard. Explain why this is the case and the limitations this can place on monitoring.

2. Describe why measuring devices need to be carefully selected. Why is it important to ensure they are appropriate for the agent and/or condition that is being monitored?

3. Select a piece of noise or vibration monitoring equipment. Describe how to fit, use, maintain and store the equipment. What strategies might you use to test the equipment and processes prior to monitoring?

4. List some ways that you would go about getting relevant work permits and/or written permission for some workplace monitoring activities.

5. Outline why it is important that you recognise your own limitations and get further advice when needed.

6. Explain how you sought advice and support; for example, when testing monitoring equipment, setting up equipment, using the equipment, preparing reports, etc. Provide specific examples.

7. Using examples, explain how you ensured your own safety and that of others during a monitoring process.

8. Explain how you assisted with the use of appropriate equipment to monitor selected agents and/or conditions in the workplace.

9. Explain how you used your knowledge of relevant Acts, regulations, codes of practice, associated standards and guidance material specific to measuring processes to help identify noise or vibration hazards, assess risk and monitor the effectiveness of risk controls. Provide specific examples.

Read the case study, and then answer the questions that follow.

Case study

Beth is the health and safety officer at an engineering workshop. One of the recurring issues relates to noise levels in a process area that affects employees nearby and is subject to complaint by residential neighbours. The noise involves grinding equipment and impact hammering, as well as steel dropping on the concrete floor. Some workers are complaining about vibration through the seats of the forklifts. Others are affected by hand-arm vibration from impact drills. The health and safety committee has made some suggestions to management about it and the decision has been made to reduce noise levels within the workshop to 70 dB(A). The committee is not sure what the 70dB(A) means but the level has been recommended by a consultant.

Nothing has been done. People are still complaining. Staff are saying that it is still too noisy in the areas of the building where they work. Neighbours are still complaining about the different types of noise they are hearing. Beth has been asked to look into this matter and report back. Part of the
process will be to monitor different areas of the building to find out the different activities and associated noise levels in those areas. Some see this as a minor issue and feel that other people are just whinging. The situation is affecting the moral of the whole plant. The HR department has recorded an increase in the number of staff on stress leave.

Beth needs to gather some information to prepare for the monitoring program and has developed a set of research questions.

1. What are the exposures or conditions that need to be monitored? Is there an exposure limit?
2. What legislative requirements, regulations, code of practice or guidance notes can help Beth?
3. How do different noise levels and sound characteristics affect people?
4. What environmental and building design factors may have an impact? How will this affect where the monitoring occurs?
5. What workflow processes may have an impact?
6. Suggest ways that Beth would consult with staff about the arrangements to collect the data required.
7. What sampling methods would be suitable?
8. What monitoring devices would be needed?
9. What information would Beth need to include in the sampling plan?
10. Who would Beth report back to? What is involved with reporting?

Note: “Noise” includes vibration.
BSBWHS409

Case Scenarios
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Instructions to the Student

These case scenarios will be discussed in tutorials with your tutor. Please read and attempt the tasks. There are no assignment answers required.

Case Scenario Questions

You are required to identify a hazardous substance /agent / condition within your own workplace and assist with workplace monitoring processes. Answer the following questions regarding the substance / agent / condition, your workplace and the processes you have implemented.

Scenario Task 1
Identify the substance / agent / condition that will be monitored and discuss what consultation you conducted to identify the need for monitoring of this substance / agent / condition.

Scenario Task 2
Identify the characteristics of the substance / agent / condition. Identify the possible harms the substance / agent / condition can cause the body. Nominate the sources you accessed to identify these characteristics.

Scenario Task 3
Determine the area where measurements will be taken. Identify the work processes that take place in this area and discuss the environmental factors that may impact the monitoring process.

Scenario Task 4
Identify the relevant legislation applicable to monitoring of this substance / agent / condition.

Scenario Task 5
Identify the relevant exposure standards for this substance / agent / condition.

Assessment Task 6
Identify if previous monitoring of the selected substance / agent / condition has occurred in your workplace. If so, interpret the previous results.

Scenario Task 7
Nominate if a work permit will be required when conducting this workplace monitoring. If so, identify the type and explain the process for applying for it.

Scenario Task 8
Identify the units of measurement you will use to measure the exposure of the substance / agent / condition.
Scenario Task 9
Research possible specialists in this field and nominate two (2) specialists you could contact if you feel you require advice and support during the monitoring process.

Scenario Task 10
Explain how you will ensure the safety of yourself and others during the monitoring process.

Scenario Task 11
Identify the type of measuring equipment that you will use to conduct the monitoring processes. Explain why it is appropriate to the selected substance / agent / condition. Identify any limitations to the device.

Scenario Task 12
Explain the process of calibration for the selected device.

Scenario Task 13
Explain the fitting, use, maintenance and storage requirements of the selected device according to the manufacturer’s instructions.

Scenario Task 14
Develop a sampling plan to follow during the monitoring process. The plan must set out:
- What is to be sampled
- Why sampling is taking place
- Who will be involved in the processes – their roles and responsibilities
- The consultation that will take place before, during and after the monitoring process
- Resources and equipment required
- The timeframe for the monitoring process
- The area the monitoring will take place
- Specific and defined sampling procedure
- How disruption to workflow will be minimised
- How operability of equipment will be checked

Scenario Task 15
After you have completed the sampling process, you are required to develop a report for senior management and the safety committee to communicate your findings. The report must address:
- Interpretation of results into an easy to understand format
- Evaluation of results as compared to exposure standards
- A graph of workplace data to identify trends
- Information presented in a clear and logical manner

Scenario Task 16
Explain how you will retain and store the records of the monitoring to ensure legislative compliance.
BSBWHS409

Practical Assessment
Practical Assessment

Instructions to the Student

- Read the study material included in your Study Guide. Read relevant texts from the list of suggested reading websites provided. Read each of the practical activity assessments for this unit of competency before commencing.

- Answer all of the requirements of the practical activities. Keep in mind you are studying a Nationally Recognised Unit of Competency. Your answers must reflect the depth of knowledge and understanding expected of a person who can work without supervision and demonstrate a level of judgement and decision making.

- The assessment tasks are to be completed in your own time.

- Notes, textbooks and computers may be used. Be prepared to:
  - View www.youtube.com
  - Utilise search engines like www.google.com.au
  - Research the websites of organisations specialising in business, management, technology and similar

- You must complete all your own work without assistance from other persons:
  - The assessor will take steps / make arrangements to ensure students do not share their work and / or answers
  - The assessor will predetermine the timeframe for the assessment and advise the student
  - The assessor will make arrangements to receive the completed assessment via email, USB, printed or similar

- All aspects of your practical activities must be assessed as satisfactory in order to achieve a satisfactory result for this assessment.

- Save your work on your computer. Backup your work and secure the backup in an alternate, safe location. For example, save a backup copy on an external drive or another computer.

- Email your work to your assessor. Plan to present your work to your trainer / assessor at your next class tutorial.

- Complete the assessment sign off sheet with your assessor.
Practical Assessment Questions

Practical Activity 1
It is the morning of the first day of monitoring. You have gathered the five (5) workers who work daily within the workshop in question. You would like to explain the sampling process to them.

Prepare a short presentation to explain the sampling process to the workers. You will give this oral presentation in the classroom environment with your assessor playing the role of one of the workers.

Ensure you briefly explain:
- What is to be sampled
- The area the sampling is to take place
- Why sampling is taking place
- What will happen to the samples
- Sampling procedure
- Roles and responsibilities of those involved
- Resources and equipment required
- Timeframe of sampling process
- How sampling will disrupt / or not disrupt production in the workplace

Note:
Use the measuring devices provided by the assessor, to conduct the following tasks.

Practical Activity 2
Check the device for operability and record the manufacturer’s instruction.

Practical Activity 3
Calibrate the device to the appropriate scale, following and recording the manufacturer’s instructions.

Practical Activity 4
Use the device to take a measurement of the current environment, following and recording the manufacturer’s instructions.

Practical Activity 5
Clean and store the device in line with the manufacturer’s instructions and record details.

Practical Activity 6
Access the exposure standards for toluene on the internet.
Practical Activity 7
Identify two (2) hazardous substances that are found in your workplace (use the information on the label and / or the MSDS to ascertain their hazardous nature).

You can broaden the search, but ensure you use recognised sources. For the WHO, a search of the Environmental Health Criteria series of publications may be a good starting point: www.who.int/ipcs/publications/ehc/en

b. Compare the exposure standards and health related data of the MSDS with the other sources.

Practical Activity 8
Access the Safe Work Australia website. Under WHS information, locate information on exposure standards. Access the Workplace Exposure Standards for Airborne Contaminants. Define the following terms according to the document:

Peak limitation
- Breathing zone
- Short term exposure limit (STEL)
- TWA ppm
- TWA mg/m³
- TWA f/mL
- Advisory carcinogen category 1A (Carc. 1A)
- Advisory carcinogen category 1B (Carc. 1B)
- Advisory carcinogen category 2 (Carc. 2)

Practical Activity 9
Access the Safe Work Australia website, locate the WHS information tab and select mining. Select the draft model Work Health and Safety Regulations and Codes of Practice for Mining. Locate the draft model Code of Practice for Health Monitoring in Mining and answer the following questions:

a. According to the draft model code of practice, what are the different types of health monitoring procedures that can be used?

b. According to the draft model code of practice, what are your obligations regarding the confidentiality of monitoring records?

c. Identify how long health monitoring records for all workers must be kept, according to the draft model code of practice.

d. Using the draft model code of practice as a guide, develop a checklist of what to do when health monitoring is required.

e. According to the draft model code of practice, what is the only monitoring method likely to give an accurate picture of the level of exposure suffered by the individual working with coal?
f. According to the draft model code of practice, what are the effects of heat stress on the body?

g. Identify four (4) heat stress indices in use in the mining industry.

**Practical Activity 10**
Research Western Australia’s Code of Practice for managing noise at workplaces, and copy and complete the following table regarding the four (4) principle grades of precision for sound level meters (SLM).

<table>
<thead>
<tr>
<th>Type / Description</th>
<th>Tolerance</th>
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<tbody>
<tr>
<td>0 – Laboratory reference meter</td>
<td></td>
</tr>
<tr>
<td>1 – Precision</td>
<td></td>
</tr>
<tr>
<td>2 – General purpose</td>
<td></td>
</tr>
<tr>
<td>3 – Survey</td>
<td></td>
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</tbody>
</table>

**Practical Activity 11**
Using the table below showing average noise levels experienced by workers, express the values visually (i.e. using a chart or graph) so that the relative values are easily assessed.

<table>
<thead>
<tr>
<th>Section</th>
<th>Department</th>
<th>FR rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Packing and shipping</td>
<td>80 dB</td>
</tr>
<tr>
<td>2</td>
<td>Product trimming</td>
<td>87 dB</td>
</tr>
<tr>
<td>3</td>
<td>Processing orders</td>
<td>73 dB</td>
</tr>
<tr>
<td>4</td>
<td>Machinery maintenance</td>
<td>95 dB</td>
</tr>
</tbody>
</table>
# COVER SHEET

## ASSIGNMENTS SUBMITTED FOR ASSESSMENT

### STUDENT DETAILS

Your assignments may be submitted by email. Please state whether the answers submitted are for:

- Underpinning Knowledge questions
- Practical questions

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>..............................................................</th>
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<td></td>
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<tr>
<td>ASSIGNMENT QUESTIONS No. ANSWERED and SUBMITTED</td>
<td>Underpinning Knowledge Practical</td>
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<tr>
<td>Student Declaration</td>
<td>I declare that this work, when submitted, is my own work</td>
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</tr>
<tr>
<td></td>
<td>Date:</td>
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<td>Assessor Only:</td>
<td>Date assessed:</td>
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</tbody>
</table>

Email to: admin@acoustar.qld.edu.au
SUBMISSION OF ASSIGNMENT
VIA STUDENT PORTAL
INSTRUCTIONS TO THE STUDENT

1. Read the study material included in this Study Guide. Read relevant texts from the list of suggested reading websites provided. Read each of the practical activity assessments for this unit of competency before commencing.

2. Upon enrolment, you should have received an invitation to log into the Acoustar Student Portal. Go to your account on the Acoustar Student Portal:
   a. Visit acoustar.qld.edu.au
   b. Click Student Info and then Portal Login
   c. If you do not have a User Name or Password, please contact us.

3. Enter into your course by clicking the course that you have enrolled into. You now have access to the Student Resources and the Assignment Questions for each Unit.

4. Attempt the Assignment Questions; you must satisfactorily complete each Assignment.

If you require assistance, please contact us:

admin@acoustar.qld.edu.au

07 3355 9707 (Business hours)