ERGONOMICS SOCIETY OF AUSTRALIA INC.

AND

NEW ZEALAND ERGONOMICS SOCIETY

COMPETENCY-BASED STANDARDS PROJECT

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Ergonomics Society of Australia Inc. and New Zealand Ergonomics Society competency-based standards for Ergonomists project final summary report

1 Background to the project

As an emerging profession, ergonomics in Australia and New Zealand is attempting to forge a lasting foothold in the professional arena. The challenge for the ergonomics profession is to ensure that those who profess to practise within it are providing services at an appropriate standard. One method of achieving this is to provide an effective quality assurance system that regulates the standards of practice within the profession. Components of this system should include appropriate education and curriculum for ergonomics courses, accreditation of these programs, a certification scheme and an effective continuing professional education program. Underpinning all this is the establishment of competency-based standards for the ergonomics profession. Once developed, these standards would provide a description of the profession's expectations of the minimum competencies that must be able to be demonstrated by those holding themselves out to be ergonomists. The standards would also clearly provide educators, as well as potential consumers, of the expectations of the profession in regards to the competencies of members of the profession and the standard to which they should be performing at the workplace.

2 Benefits of competency-based standards

The benefits to any profession of the development of a set of agreed competencies that cover entry level, together with specified performance standards, are several. They include:

(i) providing a clear description of the profession which reflects the unique roles and contexts within which the profession operates;

(ii) providing a clear statement of what is considered to be important in competent performance;

(iii) being able to state clearly what constitutes professional practice from non professional practice;

(iv) raising the profession's public profile and ensuring legitimacy of its services in the market place by providing an explicit statement of what the profession does;

(v) providing a powerful guide to educators (e.g.: curriculum development and review);

(vi) allowing consistent recognition of competencies across states and territories;

(vii) providing a resource for the accreditation of new and existing ergonomics educational programs;

(viii) open and equitable recognition of those with overseas education and work experience against agreed, public standards of performance; and

(ix) providing a resource for the development of continuing professional development programs.

3 Definitions

Competency

A competency has been defined as a combination of attributes underlying some aspect of successful professional performance. Competency-based standards for ergonomists should describe what it is that ergonomists are able to do in practice and the standard to which they should be able to do it.

Ergonomists

Ergonomists work to optimise the interactions between people and their activities, equipment, environment and systems in order to enhance productivity, health and safety, comfort and efficiency. In order to do so, they recognise and work within the range of human capabilities, limitations, behaviours and other characteristics.

4 Format of Competency Standards

The common format for competency-based standards in Australia comprises a *unit* of competency and its derived segments of *elements* of competency, *performance criteria*, *range indicators* and *cues*.

A unit of competency is a discrete component within a standard and reflects significant major functions. It is expressed as a title or statement.

Elements of competency constitute the building blocks of the unit of competency and, as such, continue the description of the key purpose of the unit itself. They describe in outcome terms the lowest logical, identifiable

and discrete groupings of actions and knowledge which a person requires to fulfil the unit of competency. Elements subdivide the unit into manageable and meaningful components that are observable in workplace performance. Elements provide the basis for developing performance criteria.

Performance criteria are statements setting out prescribed outcomes and the evidence by which an evaluation may be made. Judgements can then be made as to whether the element, or the unit as a whole, is being performed to the level acceptable in employment.

Range Indicators are optional and indicate the context in which the performance criteria would be applied

Cues are optional and are used to clarify or expand the meaning of performance criteria, so facilitating assessment of competency. They identify the critical aspects of performance. They are indicative only and are not intended to be exhaustive.

5 Broad Scope

It is essential to recognise the broad scope of the practice of ergonomics and its diversity of application areas. These competency-based standards have been developed with this in mind and with the intention of this scope being reflected within the standards. Therefore, the standards should be read and interpreted with this breadth of scope in mind.

6 Review

Any set of competencies have a limited life and need to be reviewed regularly. A mechanism for periodic review of these competency-based standards (e.g. at intervals of 5 years) will be established by Council.

7 Presentation

The competencies have been presented in two formats:

The summary version presents the units and elements of ergonomics competency as a summary for those who require a concise overview. The full outline presents the complete set of Units, Elements and Performance Criteria to illustrate the standards of performance required. The full outline is the standard reference source.

8 Complete report

A complete report detailing the full methodology of the process used in the development of the competency-based standards is available from the Federal Office of the ESA.

UNIT 1: Demonstrates professional behaviour and conduct in practice.

Element 1.1

Practices in a professional and ethical manner.

Element 1.2

Aware of the diversity of practice areas within the profession of ergonomics.

Element 1.3

Recognises the scope and limitations of the existing knowledge base of the profession during practice.

Element 1.4

Contributes to the validation of ergonomics practice through research as appropriate.

Element 1.5

Assumes responsibility for, and actively works to enhance, the level of own professional practice.

Element 1.6

Communicates effectively with clients, users, other professionals and members of the public.

Element 1.7

Strives to ensure optimal outcomes for clients and users within ethical considerations of the profession.

Element 1.8

Understands the industrial, legal and liability issues that impact upon an ergonomist's area of professional practice.

Element 1.9

Promotes the application of ergonomics.

UNIT 2: Uses relevant information appropriately for ergonomics practice.

Element 2.1

Has knowledge of the basic principles of ergonomics during assessment.

Element 2.2

Determines appropriate information for ergonomics practice.

Element 2.3

Accesses appropriate information.

Element 2.4

Uses information appropriately.

UNIT 3: Assesses the degree of match between people and their activities, equipment, environment and systems.

Element 3.1

Appreciates the extent of human variability.

Element 3.2

Determines the demands placed on people by their activities, equipment, environment and systems.

Element 3.3

Determines people's capacity to interact optimally with their activities, equipment, environment and systems .

Element 3.4

Determines the match between people and their activities, equipment, environment and systems.

UNIT 4: Designs and implements interventions to enhance the match between people and their activities, equipment, environment and systems.

Element 4.1

Consults and collaborates effectively with clients and users when developing, selecting and implementing optimal intervention/designs(s).

Element 4.2

Participates effectively in the design process.

Element 4.3

Develops and recommends options for ergonomics intervention/design.

Element 4.4

Facilitates selection of appropriate intervention/design.

Element 4.5

Facilitates implementation of interventions.

Element 4.6

Provides advice on the impact of legislation, codes of practice, Australian Standards and industry-based standards relevant to professional area of ergonomics practice.

Element 4.7

Records and reports outcomes of ergonomics assessments and interventions accurately and professionally.

UNIT 5: Evaluates ergonomics interventions.

Element 5.1

Evaluates quality and outcomes of ergonomics interventions.

Element 5.2

Facilitates modification of intervention as required, in accordance with evaluation results.

Element 5.3

Makes recommendations regarding future interventions as a result of the evaluation.

UNIT 6: Imparts ergonomics skills and information.

Element 6.1

Identifies client/user learning needs and opportunities.

Element 6.2

Formulates strategies for transfer of relevant knowledge and skills.

Element 6.3

Develops and conducts appropriate ergonomics-related education and training.

UNIT 1: Demonstrates professional behaviour and conduct in practice.

Element 1.1

Practices in a professional and ethical manner.

Performance Criteria:

1.1.1 Behaves in a manner consistent with accepted standards of professional behaviour and relevant codes of professional conduct. Gives regard to the conduct required and expected by the client.

Range Indicators:

- ESA Code of Ethics
- IEA Code of Professional Conduct

Examples of Cues:

- demonstrates an awareness of, and applies relevant Codes of Professional Conduct
- acknowledges the contribution of other people's ideas and work

Element 1.2

Demonstrates awareness of the diversity of practice areas within the profession of ergonomics.

Performance Criteria:

1.2.1 Appreciates potential application areas of ergonomics practice.

Examples of Cues:

- consumer products

- manufacturing
- office work
- transport
- health care / rehabilitation
- aviation
- domestic / residential
- architecture

1.2.2 Appreciates areas of specialisation of ergonomics practice.

Range Indicators:

- human reliability
- health, safety and well-being
- training and instruction
- occupational hygiene
- work place design
- information design
- work organisation design
- human-computer interaction

1.2.3 Recognises the integrated nature of ergonomics in regard to the disciplines from which the profession draws.

Range Indicators:

- history and nature of work
- designing for individuals and populations
- working in normal and extreme environments
- interaction between society and work

Element 1.3

Recognises the scope and limitations of the existing knowledge base of the profession during practice.

Performance Criteria:

1.3.1 Identifies limitations in existing ergonomics knowledge base.

1.3.2 Demonstrates appropriate caution when extrapolating or making assumptions from incomplete knowledge base or data set.

Element 1.4

Contributes to the validation of ergonomics practice through research as appropriate.

Performance Criteria:

1.4.1 Recognises the need for extending the boundaries of the current ergonomics knowledge base.

1.4.2 Demonstrates a knowledge of basic research methodologies.

1.4.3 Accesses, critiques and applies relevant knowledge to professional practice.

1.4.4 Contributes to the framing of appropriate research questions and designs.

1.4.5 Identifies and responds appropriately to ethical issues involved in ergonomics research.

1.4.6 Demonstrates a systematic approach to collection and storage of data.

1.4.7 Consults appropriately regarding the analysis and interpretation of data.

1.4.8 Participates in research and reports on findings from personal practice where appropriate.

Examples of Cues:

- presents findings at conferences, ergonomics societies meetings, meetings with other disciplines
- results of research / practice are submitted for publication
- reports to clients

Element 1.5

Assumes responsibility for, and actively works to enhance, the level of own professional practice.

Performance Criteria:

1.5.1 Participates in ongoing professional development activities.

Examples of Cues:

- ergonomics society meetings
- courses, conferences, etc
- maintaining library
- accessing literature
- post-graduate studies

1.5.2 Supports relevant professional associations, ideally through membership.

1.5.3 Demonstrates a willingness to modify professional behaviour and practice when appropriate.

1.5.4 Manages projects effectively.

Examples of Cues:

- manages time and resources effectively
- keeps adequate records
- demonstrates effective interpersonal skills
- demonstrates cultural awareness
- makes efficient use of available resources

1.5.5 Works in a safe manner and applies ergonomics knowledge to own work.

Range Indicators:

- teaching
- research

- consultancy
- as an employer of others

Element 1.6

Communicates effectively with clients, users, other professionals and members of the public.

Performance Criteria:

1.6.1 Uses appropriate communication method.

Range Indicators:

- oral, written, visual
- listening as well as speaking

Examples of Cues:

- communicates with people of differing backgrounds (e.g. education, cultural)
- communicates both formally and informally
- uses non-gender specific language
- compiles reports which are relevant to and can be comprehended by the intended target audiences

1.6.2 Facilitates communication between users and designers.

1.6.3 Communicates in a timely manner.

Examples of Cues:

- meets deadlines

Element 1.7

Strives to ensure optimal outcomes for clients and users within ethical considerations of the profession.

Performance Criteria:

1.7.1 Recognises own level of expertise and works within these existing boundaries of competence.

Range Indicators:

- foundation sciences
- ergonomics knowledge
- ergonomics methods

Examples of Cues:

- refers out work outside the boundaries of their own expertise
- collaborates/seeks advice/ consults with others

1.7.2 Evaluates quality of own work as well as the degree of client/user satisfaction.

Examples of Cues:

- peer review
- seeks client/user feedback and acts on it
- performance appraisal

1.7.3 Understands the roles and uses the skills of related disciplines appropriately.

Range Indicators:

- psychology
- engineering
- architecture/design
- health professionals
- organisational design

Examples of Cues:

- involves other disciplines in joint interventions/projects
- refers to other disciplines as appropriate

1.7.4 Undertakes advocacy roles on behalf of the client / when appropriate.

Element 1.8

Understands the industrial, legal and liability issues that impact upon an ergonomist's area of professional practice.

Performance Criteria:

1.8.1 Understands relevant legislative and non-legislative requirements.

Range Indicators:

- New Zealand
- Commonwealth (Australia)
- State (Australia)

Examples of Cues:

- industrial relations law and practice
- occupational health and safety legislation
- industrial awards, agreements and conditions
- standards

1.8.2 Understands professional indemnity issues related to professional practice.

Element 1.9

Promotes the application of ergonomics.

Performance criteria:

1.9.1 Encourages clients to apply ergonomics.

1.9.2 Defines the purpose and scope of ergonomics to clients / users and the community.

1.9.3 Argues the rationale for ergonomics intervention.

Examples of Cues:

- cost-benefits
- enhancement of performance and usability
- enhancement of productivity
- improved health, safety, comfort and satisfaction

1.9.4 Educates on the roles of the ergonomist.

Range Indicators:

- clients
- users
- practitioners in other disciplines
- community

UNIT 2: Uses relevant information appropriately for ergonomics practice.

Element 2.1

Demonstrates knowledge of the basic principles of ergonomics during assessment.

Performance Criteria:

2.1.1 Considers the design aspects relevant to the practice of ergonomics.

Examples of Cues:

- applies the principles of anthropometrics as required
- applies appropriate design principles
- demonstrates awareness of design implications for effective work places and spaces for people
- contributes to designing for special-needs groups
- demonstrates awareness of the cognitive and perceptual capabilities of people when designing human-machine and human-computer interfaces

2.1.2 Considers the biological aspects relevant to the practice of ergonomics.

Examples of Cues:

- demonstrates an awareness of anatomy, functional anatomy, work/exercise physiology, biomechanics, pathology and environmental science with respect to the capacity of people and the demands placed on people
- demonstrates an awareness of the significance of posture and movement and its relationship to effective and efficient performance of tasks and comfort.

2.1.3 Considers the behavioural and organisational aspects relevant to the practice of ergonomics.

Examples of Cues:

- aware of the basic concepts of cognitive psychology as they apply to people's interaction with their environment, activities and products
- aware of the basic concepts of organisational psychology as they apply to people's interactions within structured groups and organisations

2.1.4 Recognises the principles of systems theory and how they apply to ergonomics situations.

Range Indicators:

- structure and dynamics of systems
- human as a system component
- system analysis and design

Element 2.2

Determines appropriate information for ergonomics practice.

Performance Criteria:

2.2.1 Understands the types of information relevant to ergonomics practice.

Range Indictors:

- information input
- human output
- human control
- work place design
- environmental conditions

Examples of Cues:

- previous ergonomics input

- organisational climate
- attitudes to product use
- person-machine-environment interface
- physical, psychological and cognitive demands of activities to be carried out to fulfil system objectives
- level to which environmental conditions permit satisfactory levels of human performance
- operational requirements of any given control (force, speed, precision etc.)
- compatibility between information inputs and human information-receiving capacities
- available literature (research, case study, standards and legislation)
- organisational records on absenteeism, productivity, incidents
- task and job descriptions

2.2.2 Identifies appropriate sources of information.

Examples of Cues:

- literature (printed, internet)
- colleagues
- information from related professionals
- clients / users

Element 2.3

Accesses appropriate information.

Performance Criteria:

2.3.1 Makes purposeful, systematic inquiries

Examples of Cues:

- uses abstract services, CD ROMS, keyword searches
- uses available sets of quantitative data
- uses judgements of experts
- consults widely, especially with end-users

2.3.2 Maintains or has access to a professional library.

2.3.3 Appropriate available information is accessed.

Examples of Cues:

- product specifications
- organisational structure
- annual reports
- medical files
- reports from related disciplines
- plans, sketches and drawings
- human characteristics / anthropometric data
- structured observations, discussions and interviews
- text books and journals

2.3.4 Collects additional relevant information using appropriate methods when available information is not sufficient.

2.3.5 Selects and uses appropriate data collection methods and techniques.

Examples of Cues:

- observational methods
- interview, questionnaire
- checklists and surveys
- hierarchical task analysis
- participant observation
- other qualitative research techniques
- quantitative assessment techniques
- use of measurement instruments such as force meter, tape measure, camera / video, heart rate monitor, EMG, noise meter, lux meter and anemometer
- measures such as anthropometrics
- computer aided techniques
- user trial, prototyping, mock-ups
- task / job analysis

Element 2.4

Uses information appropriately

Performance Criteria:

2.4.1 Critically appraises and analyses information.

2.4.2 Recognises and acknowledges limitations and scope of information gathered and used.

2.4.3 Acknowledges sources of information and ideas.

2.4.4 Identifies the potential and scope for the application of ergonomics.

2.4.5 Explains relevance of information to client.

UNIT 3: Assesses the degree of match between people and their activities, equipment, environment and systems.

Element 3.1

Appreciates the extent of human variability.

Performance Criteria:

3.1.1 Understands the influence of such factors as a users' body size, skill, cognitive abilities, age, sensory capacity, general health and experience.

Element 3.2

Determines the demands placed on people by their activities, equipment, environment and systems.

Performance Criteria:

3.2.1 Aware of the physical demands on people and on their performance.

Range Indicators:

- light
- climate
- noise
- motion
- vibration
- biomechanical
- physiological

Examples of Cues:

- understands the varying lighting requirements for different types of tasks
- aware of the implications of glare in the visual field and strategies to eliminate its presence or reduce its impact
- aware that lighting needs may vary with age
- aware of lighting issues around screen based displays
- understands the effect of clothing on heat exchange
- demonstrates a basic understanding of thermal comfort, heat and cold stress and their effect on performance
- demonstrates a basic awareness of the effects of noise (both damaging and annoyance noise) on performance
- demonstrates a basic awareness of the physiological effects and performance effects of vibration
- aware of the manual handling and postural demands of activities
- aware of possible sources of stress such as heavy work, immobilisation, physical activity in association with heat and cold, noise, sleep loss
- observes strain through oxygen consumption, blood chemistry, electrical activity of the muscles or brain, heart rate, body temperature, work rate, errors
- analyses activities according to postures attained
- measures static and dynamic strength, torque and force
- estimates disc compression
- understands the physiological, biomechanical, pyschophysical and epidemiological approach to assessing the demand of manual handling activities
- understands the basic principles of hand tool and device design (e.g. maintaining joints in mid-range, avoiding soft tissue compression, reducing repetition and static muscle contraction, handedness, effect of gloves, sensory and proprioceptive feedback)

3.2.2 Aware of the organisational demands on people and on their performance.

Examples of Cues:

- job control and content
- workload and deadlines
- rapidity of change
- potential for redundancy
- client aggression

- systems breakdowns
- isolation
- feedback and recognition
- opportunities for training and development
- role clarity
- performance counselling processes
- interpersonal conflict management
- disciplinary processes
- opportunities for participation

3.2.3 Aware of the psychological demand of activities on people and on their performance.

Range Indicators:

- cognition
- perception
- light
- noise

Examples of Cues:

- degree of sensory feedback from system
- reaction time
- detectability, discriminability and meaningfulness of stimuli
- degree of compatibility of stimuli and responses to human expectation
- the degree of attention (selective or sustained) required by the task

Element 3.3

Determines people's capacity to interact optimally with their activities, equipment, environment and systems.

Performance Criteria:

3.3.1 Aware of the factors affecting people and their performance at different times and in different situations.

Range Indicators:

- human sensory and perceptual abilities and limitations
- signal detection
- memory
- decision making
- attention
- mental workload
- physical work and manual handling
- motor skills
- human control of systems
- controls and data entry devices
- hand tools and devices
- organisational environment and climate

Examples of Cues:

- work motivation factors
- aware of the implications of human reaction times
- measures and indicators of physiological strain (e.g. oxygen consumption, heart rate)
- factors affecting energy consumption (e.g. work posture, work rate, tool design, work-rest cycle, training effect, sex, age, fitness)
- factors affecting strength and endurance
- different approaches to assessing manual handling capabilities
- physical arrangement of displays and controls
- coding controls by shape, texture, size, colour, labelling etc.
- aware of the principles of hand tool design
- aware of the implications of vibration and the use of gloves

Element 3.4

Determines the match between people and their activities, equipment, environment and systems.

Performance Criteria:

3.4.1 Analyses and interprets the information on external demands and human capacities to determine the degree of match.

3.4.2 Understands the potential consequences of varying degrees of match between people and their activities, equipment, environment and systems.

Examples of Cues:

- quality and quantity of output
- quantity of output per unit time
- periods of absence due to illness or dissatisfaction
- underuse of products, equipment and other systems
- accidents or critical incidents
- complaints and criticisms of products and environments
- episodes of discomfort, pain and fatigue
- decreased reliability
- slower learning times
- decreased competitiveness of products
- increased costs
- decreased efficiency

UNIT 4: Designs and implements interventions to enhance the match between people and their activities, equipment, environment and systems.

Element 4.1

Consults and collaborates effectively with clients and users when developing, selecting and implementing optimal intervention/designs(s).

Performance Criteria:

4.1.1 Communicates effectively with clients and users regarding the preferred intervention / design option(s).

Examples of Cues:

- reference to identified problems
- reference to initial brief
- cost-benefit analysis

4.1.2 Assists clients and users to understand and participate in the consultation process.

4.1.3 Outlines realistic expectations of the outcome, the limitations to achieving that outcome, any risks involved and the costs of the intervention to the client.

4.1.4 Considers the views and input from clients and users.

Element 4.2

Participates effectively in the design process.

Performance Criteria:

4.2.1 Facilitates incorporation of ergonomics principles into the design process.

Range Indicators:

- product design applications
- industrial design applications
- organisation structural design applications
- software design applications

Examples of Cues:

- evaluates usability at appropriate stages of the design process such as the pre-project, project and post-project phases.
- evaluates user preferences using appropriate techniques such as
    - task analysis
    - questionnaire / survey / checklists
    - focus groups
    - observational analysis
    - sequence diagrams
    - anthropometric studies
    - prototyping / mock-ups / simulations

Element 4.3

Develops and recommends options for ergonomics intervention/design.

Performance Criteria:

4.3.1 Recognises the implications of assessment findings for ergonomics intervention.

4.3.2 Considers the influence of occupational, social, environmental, cultural, financial and individual factors on the issues identified and their implications for a plan of intervention.

Examples of Cues:

- recognises the influence of workplace management, staff dynamics, organisational culture and stage of the design process on the implementation of any intervention program
- understands and respects individual beliefs and attitudes to certain ergonomics interventions

4.3.3 Seeks other advice where necessary.

Range Indicators:

- building regulations
- architectural and equipment design
- technological and engineering factors

Examples of Cues:

- Standards, codes, guidelines
- building industry
- equipment suppliers
- architects
- industrial designers/other designers

4.3.4 Generates possible intervention options/action plans/solutions.

Examples of Cues:

- list of reasonable intervention options produced
- develops project plan
- considers risk management theory

4.3.5 Makes appropriate recommendations for activities, equipment, environments and systems.

Element 4.4

Facilitates selection of appropriate intervention/design.

Performance Criteria:

4.4.1 Explains the rationale for the selection of interventions in terms of the principles and methods of ergonomics.

4.4.2 Demonstrates an understanding of the factors that would influence the effectiveness of ergonomics intervention.

Examples of Cues:

- follow-up and review
- acceptance of the intervention (change) by the work place or those affected
- clear and realistic expectations of the effectiveness of the intervention
- provides sufficient education and information regarding any involved changes to client and users
- availability and allocation of appropriate resources
- on-going reinforcement of change at the user level
- understands the impact of organisational culture, and the way that people respond to cognitive, environmental, musculoskeletal and behaviour demands.

4.4.3 Considers the availability of resources and recognises limitations imposed.

Examples of Cues:

- takes action to ensure cost-effective utilisation of skills, time and consumables
- considers priorities of client
- offers creative options for more efficient resource utilisation
- recognises the issue of over-servicing
- able to provide client with short and long term strategies to enable better longer term financial planning for implementation

Element 4.5

Facilitates implementation of interventions.

Performance Criteria:

4.5.1 Educates clients in the safe use and maintenance of specialised equipment / systems prescribed.

4.5.2 Bases ergonomics intervention strategies on assessment data and is guided by established methods and practices.

Range Indicators (examples of areas of specialty):

- human reliability
- health, safety and well-being
- training and instruction
- occupational hygiene
- work place design
- information design
- work organisation design
- product design
- human-computer interaction
- environmental ergonomics
- organisational behaviour
- rehabilitation ergonomics

Range Indicators (examples of areas of application):

- consumer products
- manufacturing
- office work
- transport
- process industry
- health care
- automation
- architecture
- sport and leisure activities
- equipment design

Element 4.6

Provides advice on the impact of legislation, codes of practice, Australian Standards and industry-based standards relevant to professional area of ergonomics practice.

Performance Criteria:

4.6.1 Identifies documentation relevant to area of ergonomics practice.

4.6.2 Explains the relevance of this material to clients and users.

4.6.3 Uses this documentation as minimum standard where appropriate.

Element 4.7

Records and reports outcomes of ergonomics assessments and interventions accurately and professionally.

Performance Criteria:

4.7.1 Records and reports assessment and intervention findings accurately and consistently.

Examples of Cues:

- uses an efficient recording system
- able to document the justification for certain ergonomics interventions
- able to prioritise ergonomics issues in assessment documentation
- consistent with medico-legal requirements where necessary
- keep records according to employer's requirements and policy
- legibly sign and date each entry
- leave no spaces between each record
- reports are written objectively and concisely
- reference to appropriate legislation/standards/codes
- reference to appropriate literature

4.7.2 Records are maintained in a confidential manner and made secure.

Range Indicator:

- electronic and written records

UNIT 5: Evaluates ergonomics interventions.

Element 5.1

Evaluates quality and outcomes of ergonomics interventions.

Performance Criteria:

5.1.1 Evaluates interventions using appropriate measures.

Examples of Cues:

- professional consensus
- theoretical knowledge and / or research methodology
- outcomes must be able to be explained in terms of the goals and objectives of the intervention
- compares the actual outcome with expected outcome and determine the reasons for any difference
- goals attained / performance indicators met
- use of assessment tools to measure change
- outcome studies

5.1.2 Seeks client / user feedback regarding intervention.

Examples of Cues:

- client / user satisfaction survey
- client / user feedback evaluation forms

5.1.3 Evaluates the cost-effectiveness of the intervention.

Examples of Cues:

- cost-benefit
- formative and summative evaluation
- quality of life
- qualitative and quantitative evaluation
- process, impact and outcome evaluation
- compares costs of alternative approaches to intervention

5.1.4 Monitors the impact of ergonomics implementation over a period of time.

5.1.5 Identifies factors influencing intervention outcomes.

Examples of Cues:

- quality and extent of intervention
- organisational, political, social and financial factors
- barriers to change
- critical incidents

Element 5.2

Facilitates modification of intervention as required, in accordance with evaluation results.

Performance Criteria:

5.2.1 Considers client and user expectations of outcomes.

5.2.2 Makes appropriate determination of when to withdraw services.

5.2.3 Reason(s) for change to intervention programs are articulated.

5.2.4 Selects alternative interventions and resources.

5.2.5 Negotiates changes to the intervention program with the client / user.

Element 5.3

Makes recommendations regarding future interventions as a result of the evaluation.

Performance Criteria:

5.3.1 Makes recommendations based on intervention evaluation.

5.3.2 Makes recommended priorities and goals in consultation with the client / user.

5.3.3 Presents clearly written evaluation reports to relevant personnel in a timely manner which are pitched at an appropriate level.

UNIT 6: Imparts ergonomics skills and information.

Element 6.1

Identifies client/user learning needs and opportunities.

Performance Criteria:

6.1.1 Conducts learning needs analysis.

Examples of Cues:

- conducts skills analysis

6.1.2 Identifies opportunities for learning.

Examples of Cues:

- available resources
- available courses

Element 6.2

Formulates strategies for transfer of relevant knowledge and skills.

Performance Criteria:

6.2.1 Designs appropriate education and training.

Examples of Cues:

- incorporation of learning principles
- incorporation of learning experiences
- supervisor involvement

- ability to define the aim, objectives, structure and composition of training program

Element 6.3

Develops and conducts appropriate ergonomics-related education and training.

Range Indicators:

- formal face-to-face training
- group facilitation
- mentoring
- developing information products
- designing manuals

Performance Criteria:

6.3.1 Uses appropriate learning method.

Examples of Cues:

- speaks to groups and individuals at different levels
- formal and informal
- oral, written, visual
- observation and management of group dynamics

6.3.2 Uses appropriate communication media.

Examples of Cues:

- audio-visual techniques
- case studies
- use of specific and relevant examples

6.3.3 Evaluates learning.

Examples of Cues:

- assessment
- short term / long term evaluation
- knowledge, attitude and behaviour change

- skills enhancement