

Ergonomics Society of South Africa (ESSA)

**Prof. Andrew Thatcher
Immediate Past-President and Member of the
Professional Affairs Board**



History of ESSA



- 1983: Chamber of Mines
- 1984: Ergonomics Society of Southern Africa formed (30 members)
- 1985: First conference
- 1994: Ergonomics Society of South Africa formed
- Conferences: 1985, 1986, 1987, 1989, 1994, 1996, 1998, 2001, 2006, 2007, 2013, 2015, 2016, 2017, 2019

Background

“Ergonomics (or human factors) is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance. Ergonomists contribute to the design and evaluation of tasks, jobs, products, environments and systems in order to make them compatible with the needs, abilities and limitations of people.”

(International Ergonomics Association, 2000)

Background

- Ergonomics activity affects the interplay of humans with their environment
- It has a particular responsibility to ensure health and well-being of individuals subjected to a design or intervention
- *This is particularly the case for delayed effects that occur and that are not perceived at an early stage (such as lower back pain), and for adverse effects on humans that are difficult to predict*

Background

- Ergonomics is multidisciplinary in its nature by integrating different human/life sciences, engineering, social and economic sciences
- This requires a specific education in terms of basic knowledge of different disciplines contributing to Ergonomics, as well as knowledge of how to synthesize the different approaches to solve Ergonomics problems and to cooperate with other professions involved
- Thus, Ergonomists are required to further anticipate the social and the economic impacts of any design or intervention program as well

Ergonomics and Occupational Health and Safety

- Designing work to fit the worker, rather than physically forcing the worker's body to fit the work
- Adapting environments, organisations, teams, jobs, tasks, work stations, tools, and equipment to fit the worker to help eliminate or reduce risk
- Common issues addressed include musculoskeletal disease, repetitive strain issues, work-related upper limb disease, lifting and pushing tasks, fatigue management, task-tool design, organisational design
- Takes a systems approach by considering the anatomical, physiological, and psychological factors within context; increasingly complex adaptive systems being considered.

Professional Registration of Ergonomists in South Africa



Role of the ESSA Professional Affairs Board (ESSA-PAB)

- ESSA-PAB sets the minimum learning standards and qualifications for the recognition of competency in Ergonomics in South Africa
- Aligned to the standards of the
 - International Ergonomics Association (IEA)
 - European and US certification bodies (CREE and BCPE) and compatible to most other certification bodies around the world
- Individuals who **meet the predetermined criteria** may apply to be certified and registered by the Board. The ESSA-PAB also assists in the regulation of the professional and ethical standards pertaining to those practicing Ergonomics in Southern Africa.

Why Certification?

- Describes minimum standards in training and experience
- Benefits for Ergonomists and for the users of Ergonomic services
 - a) Built in quality and credibility for recognized CEA's and CPE's
 - b) Protect users from poor Ergonomics services/ 'fly by nights'
 - c) Protect the reputation of Ergonomics
- Benefits for the economy
 - a) Benefit from Ergonomics contributions for their further development
 - b) Develop proper standards for local practice and
 - c) To ensure inexperienced users of Ergonomics services receive a suitable standard of delivery

Certified Ergonomics Professionals

Certified Ergonomics Associate (CEA)

① Education:

- A successful undergraduate education (min 3 years)
- BSc degree or cognate BA or Engineering degree
- Total 360 hrs in the prescribed knowledge areas

② Professional practice

- Two years fulltime in Ergonomics or equivalent amount part time
- Work samples to prove Ergonomics competencies

Certified Professional Ergonomist (CPE)

① Education:

- Postgraduate education of no less than altogether 5 years
- MSc/MA/Engineering degree – in Ergonomics or cognate discipline
- Total 660 hrs in the prescribed knowledge areas

② Professional practice:

- Four years full time in Ergonomics or equivalent amount part time
- Work samples to prove Ergonomics competencies



Ergonomics Education – Areas of knowledge

1. Ergonomics Principles

- Ergonomics Approach
- Systems Theory

2. Human Characteristics

- Physiological and Physical Aspects
- Psychological and Cognitive Aspects
- Social and Organisational Aspects
- Physical Environment



Ergonomics Education – Areas of knowledge

3. Work Analysis and Measurement

- Statistics and Experimental Design
- Computation and Information Technology
- Instrumentation
- Methods of Measurement and Investigation
- Work Analysis

Ergonomics Education – Areas of knowledge

4. People and Technology

- Technology
- Human Reliability
- Health, Safety and Well-Being
- Training and Instruction
- Occupational Hygiene
- Workplace Design
- Information Design
- Work Organisation Design

5. Application (project)

6. Professional issues

Professional Practice

- At least one major work sample (contribution more than 300hrs)
- One or more smaller work samples (less than 300hrs)
- Possible work samples:
 - research,
 - analysis,
 - specification,
 - evaluation or recommendation reports,
 - theses or dissertations,
 - designs,
 - trial or deposition testimony,
 - patent applications or patents granted,
 - forensic reports,
 - books or book chapters published by commercial publishing houses, and
 - scientific articles published in refereed journals.
- Must demonstrate the competencies as follows:

Required Competencies in Professional Practice

1. Investigates and analyses the demands for Ergonomics design to ensure appropriate interaction between work, product and environment, and human needs, capabilities and limitations.
2. Analyses and interprets findings of Ergonomics investigations.
3. Documents Ergonomics findings appropriately.
4. Determines the compatibility of human capabilities with planned or existing demands.
5. Develops a plan for Ergonomics design or intervention.
6. Makes appropriate recommendations for Ergonomics changes.
7. Implements recommendations to improve human performance, health and well-being.
8. Evaluates outcomes of implementing Ergonomics recommendations.
9. Demonstrates professional behavior and does not work outside his/her area of competence.

Documents to be Submitted

- Available on the ESSA web-site:
<https://www.Ergonomicssa.com/> (under the tab PAB Certification)
- Completed application form
- Signed Code of Conduct
- Supporting evidence (in a single document)
- Proof of payment

Application Details

Application Fees:

- Certified Professional Ergonomist (CPE) R1500.00
- Certified Ergonomics Associate (CEA) R1000.00

Note: Application Fees are non-refundable

Enquiries:

Professional Affairs Board Chairperson:

Swantje Zschernack (email: s.zschernack@ru.ac.za).

CONTACT US



www.Ergonomicssa.com



Ergonomicssa@gmail.com



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