

Certification of ergonomists : A look at the European experience



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By courtesy of the former CREE President
Philippe Mairiaux who made most of the slides

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The European Ergonomist (Eur.Erg.) Certification System

- *Historical perspective : Why ? When ?*
- *System principles and content*
- *CREE structures and organisation*
- *Certification procedures and assessment criteria*
- *Impact on the ergonomics profession*
- *Frequently debated questions*

The Eur. Erg. certification system

– When and why ?

- December 1989 : the « frame » Directive on Health and Safety at work
- January 1993: 12 countries but one single market, mutual recognition of diplomas, free mobility for qualified professionals
- Anticipated demand for ergonomists but almost no system for assessing professional competency

➡ need to distinguish between self-proclaimed and truly qualified ergonomists

➡ setting up of the HETPEP (Harmonising European Training Programmes for the Ergonomic Profession) group by:

*Pieter Rookmaaker, M. Hurts, NVvE, NL; Nigel Corlett, E.S., UK;
Walter Schweir, GfA, D; Yvon Queinnec, SELF, F*

The Eur. Erg. certification system

Some historical landmarks

- July 1991 - draft HETPEP report (IEA Congress Paris)
- February 1992, Leiden (NL)
 - final HETPEP report
 - setting up of the “Centre for Registration of European Ergonomists” (CREE)
- July, October 1994 ... 4th and 5th CREE meetings
... and the first 20 Eur. Erg. ® registrations
- Gothenburg, June 2007, 31st CREE Council meeting :
 - About 413 Eur.Erg.s are in the Register
 - 13 ergonomics societies are participating in CREE

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The Eur. Erg. certification system

Original aims (HETPEP 1992)

- to promote mutual recognition regarding *ergonomics education* and training programmes
- to provide a framework for *assessing components of a professional level of qualification*
- to facilitate the *mobility* of *ergonomists* between European countries
- to improve the *professional image* of ergonomics

The ergonomics formation framework

The HETPEP model

Eur. Erg. = Education + Training + Experience

- ***Education*** : courses, seminars, laboratory exercises at the academic level, minimum 3 years of which ergonomics 1 year
- ***Training*** : learning through supervised doing in applied situations (minimum 1 year)
- ***Experience*** : unsupervised professional practice (minimum 2 years)

The ergonomics formation framework

Education component

- ***Courses and seminars*** :
 - a minimum of 320 hours (contact hours)
 - broken down in five “areas of knowledge”
 - each area of knowledge involving several related “topics”
- ***Laboratory exercises*** : about 100 hours
- ***Integration of knowledge through applications*** : a minimum of six weeks (240 h)

The ergonomics formation framework

Area of Knowledge		Hours	Topic	
A	Ergonomics Principles	20	1	Ergonomics approach
B	Human Characteristics	80	1 2 3 4	Anatomy, Demographics and Physiology Human Psychology Social and Organisational Aspects Physical Environment
C	Work Analysis and Measurement	100	1 2 3 4 5	Statistics and Experimental Design Computation and Information Technology Instrumentation Methods of Measurement and Investigation Work Analysis

The ergonomics formation framework

Area of Knowledge		Hours	Topic	
D	People and Technology	100	1	Systems Theory
			2	Technology
			3	Human Reliability (X)
			4	Health, Safety and Well Being (X)
			5	Training and Instruction (X)
			6	Occupational Hygiene (X)
			7	Workplace Design (X)
			8	Information Design (X)
			9	Work Organisation Design (X)
E	Applications	6 weeks		Aproject pursued by the individuaao
F	Professional Issues	20		Legislation, the ergonomist in the organisation and the society, the marketing of ergonomics

(X) Optional topics; 3 of them have to be covered, at least 1 design topic

KUNSKAPSOMRÅDE

ÄMNESOMRÅDEN

POÄNG

- **A Ergonomiska principer** $\Sigma \geq 2 \text{ p}$
- **A1.** Ergonomiskt synsätt, begreppsbildning, etik, $\geq 2\text{p}$
ergonomens yrkesroll, ergonomin i samhället,
historiska aspekter på arbete

- **B Humanvetenskap** $\Sigma \geq 10 \text{ p}$
- **B1.** Anatomi, arbetsfysiologi, belastningsergonomi $\geq 3\text{p}$
- **B2a.** Arbetspsykologi, $\geq 2\text{p}^*$
- **B2b** Perceptions- och kognitionspsykologi $\geq 2\text{p}^*$
- **B3** Socialpsykologi/sociologi/arbetsorganisation $\geq 2\text{p}$
- **B4.** Människan och den fysikaliska miljön $\geq 3\text{p}$
- *) välj endera av dessa två ämnesområden.

KUNSKAPSOMRÅDE

ÄMNESOMRÅDEN POÄNG

-
- **C** **Arbetsanalys & undersökningsmetodik** $\sum \geq 10 \text{ p}$
 - **C1.** Statistik och experimentdesign $\geq 2\text{p}$
 - **C2.** Datorer och informationsteknologi $\geq 2\text{p}$
 - **C3.** Mätteknik och mätinstrument $\geq 2\text{p}$
 - **C4.** Undersökningar och mätmetodik $\geq 2\text{p}$
 - **C5.** Arbetsanalysmetoder $\geq 2\text{p}$

KUNSKAPSOMRÅDE

ÄMNESOMRÅDEN

POÄNG

●	D	Människor och teknik	$\Sigma \geq 12 \text{ p}$
●		D1. Systemteori inkl. organisationsteori	$\geq 3\text{p}$
●		D2. Teknologi	$\geq 3\text{p}$
●		D3. Arbetsolycksfall	$\geq 2\text{p}^*$
●		D4. Hälsa, säkerhet, rehabilitering etc	$\geq 2\text{p}^*$
●		D5. Utbildning och träning	$\geq 2\text{p}^*$
●		D6. Arbetshygien	$\geq 2\text{p}^*$
●		D7. Arbetsplatsdesign	$\geq 2\text{p}^*$
●		D8 Informationsdesign	$\geq 2\text{p}^*$
●		D9 Organisationsdesign	$\geq 2\text{p}^*$
●			

*) välj minst tre av dessa ämnesområden, dock minst ett av D7-D9.

KUNSKAPSOMRÅDE

ÄMNESOMRÅDEN

POÄNG

- **E Tillämpad ergonomi** $\Sigma \geq 6 \text{ p}$
- **E 1.** Eget projektarbete med ergonomirelevant innehåll motsvarande minst 6 veckors heltidsstudier.

KUNSKAPSOMRÅDE

ÄMNESOMRÅDEN

POÄNG

- **F Professionell know-how och övriga relevanta områden** $\Sigma \geq 10 p$
- **F1.** Användarmedverkan och brukarinflytande $\geq 2p$
- **F2.** Lagar, avtal och standarder $\geq 2p$
- **F3.** Kunskaper om förändringsprocesser $\geq 2p$
- **F4.** Kunskaper om design & produktutveckling $\geq 2p^*$
- **F5.** Projektledning, arbetsledning $\geq 2p^*$
- **F6.** Produktionsteknik/datateknik $\geq 2p^*$
- **F7.** Arbetsmiljö och ekonomi $\geq 2p^*$

*) välj minst två av dessa eller visa att du har annan relevant kunskap om minst 2p per ämnesområde

The ergonomics formation framework

The training component

- *Supervised training :*

- learning through supervised doing in applied situations (minimum 1 year)
- actually provided by very few institutions or companies in Europe
- this requirement provisionally replaced by one more year of experience

Note: Up to 6 months of thesis work etc. in education can be counted as supervised training

The ergonomics formation framework

The experience component

- ***Experience*** :
 - independent professional practice performed as main activity for a minimal duration of 2 years after the education period end,
 - if no supervised training 3 years are required

The European Ergonomist (Eur.Erg.) Certification System

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The Eur. Erg. certification system

CREE structure and organisation

CREE members :

- National admission organisations
 - either within European ergonomics societies (e.g. APERGO, ES, GfA, NES, SIE, ...)
 - either distinct organisations set up by the national ergonomics society (e.g. BAREE/BES, SRe/NVvE, ARTEE/SELF)

CREE Council :

- 13 member representatives (observers permitted: IEA, new member candidates, etc.)
- 4 Board members

CREE Council - November 2006



The CREE Council (June 2007)



Representatives

APERGO (P), Francisco REBELO, ergonomist

ARTEE (F), Bernard DUGUE, engineer

BAREE(B), Dina NOTTE, psychologist

ERY (FIN), Veli-Matti TUURE, agronomist

E.S.(UK), David O NEILL, engineer

GfA (D), Helmut STRASSER, engineer

Hellenic E.S.(GR), Dimitris NATHANAEL, engineer

Irish E.S.(EI), Bridget MASTERSON, ergonomist

Nordic E.S., Anders SUNDIN, engineer

AEE (SP), Francesco BALAGUE, physician

S.I.E.(I), Erminia ATTAIANESE, architect

SrE (NL), Maria NIESSEN, psychologist

SwissErgo (CH), Berit KAASLI KLARER, ergonomist

CREE Board



- President
Roland Örtengren
Engineer



- Communication and web
Damien Huyghe
Engineer



- Secretary General
Maggie Graf
Ergonomist



- Treasurer
Rob Saunders
Management sc.

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The Eur. Erg. certification process

- *Step 1 - assessment at the national level*
 - examining body : national assessment board (NAB)
at least 3 ergonomically qualified people
half of them must be Eur. Erg.
all assessors have to be accepted by CREE
 - a full standard application form must be provided describing
 - applicant educational path
 - current and last 3 years professional activities
 - main projects carried out (with reports' copies or summaries)

The Eur. Erg. certification process

- *Step 1 - assessment at the national level*
 - decision : to submit, or not submit, the application to the CREE Council
 - an appeal procedure can be initiated by rejected applicants
 - In NES we don't reject we give advice on how to improve and table the application until fulfilment of the requirements is accomplished

The Eur. Erg. certification process

- *Step 2 - assessment at the CREE level*
 - carried out on request from the NAB
 - an electronic form is sent in at least one month in advance of a scheduled CREE meeting
 - using a two-pages English summary describing the applicant's
 - educational background
 - field of practice
 - matching of HETPEP educational criteria
 - ergonomics experience features and examples of recently conducted projects

The Eur. Erg. certification process

- ***Step 2 - assessment at the CREE level***
 - decision : registration, or not, of the applicant ; in some cases, decision may be to postpone
- ***Step 3 - inscription into the Register for a 5-year period after payment of the CREE fees***
- ***The Eur. Erg. Register can be accessed at***
www.eurerg.org

The Eur. Erg. recertification process

- *After 5 years, Eur.Erg.s have to apply for renewal of their certification*
- *Assessment criteria :*
 - *To remain active in ergonomics and to prove it through projects*
 - *To demonstrate continuing ability to interact in the design process*
 - *To document continuous professional development in accordance with a set of own goals as defined by the ergonomist*
- *Assessment form : 1-page summary (at CREE level)*

The Eur. Erg. certification system

Assessment criteria for recertification

- *to practice ergonomics*
 - for at least 50% of the time
 - in the broad sense of the definition
 - with a demonstrated ability to interact with designers and engineers
 - and, demonstrate enough items of Continuous Professional Development (CPD)

The European Ergonomist (Eur.Erg.) Certification System

- *Further explanations to the criteria for assessment in the Eur. Erg. certification system*

The Eur. Erg. certification system

Explanations to the criteria for assessment

- *Additional criterion : to practice ergonomics for at least 50% of the time*
 - The title is intended for professionals having ergonomics as their main (if not exclusive) professional activity
 - To distinguish practising ergonomists from other professionals (safety engineers, occupational physicians, physiotherapists, ..) who show an interest in ergonomics, have even an education in ergonomics, but practise it only as a complementary activity

The Eur. Erg. certification system

Explanations to the criteria for assessment

- *Additional criterion : to practice ergonomics in the broad sense of the definition*
 - to ask for a basic understanding across the whole field of ergonomics, whatever the applicant background, engineering, psychology, motion sciences, medicine, ...
 - for 1st certification, the system targets “generalists” in ergonomics, not specialists in load lifting biomechanics or in graphic interfaces design
 - later on, a specialisation may be part of a natural career path

The Eur. Erg. certification system

Explanations to the criteria for assessment

- *Additional criterion : to practice ergonomics with a demonstrated ability to interact with designers and engineers*
 - Ergonomics is a design-related discipline
 - Attribution of the Eur.Erg. title should not be limited to the design professionals
 - Professionals with a medical or psychology background have however to demonstrate their competence in design related activities based on their projects

The Eur. Erg. certification system

Explanations to the criteria for assessment

- *CREE procedures aim at assessing knowledge and competencies when put into practice*
 - ➔ Large flexibility in evaluating the education component in those applicants without a MSc in Ergonomics
 - ➔ No formal (written or oral) examination of the applicant knowledge deemed necessary since the creation of the certification system

The Eur. Erg. certification system

Some keys favouring quality

- *Certification procedures designed so as to meet the EN45013 norm requirements*
- *The founding fathers were wise to develop a two-levels certification procedure :*
 - *1 assessment at the national level*
 - *2 assessment at the European level (by CREE)*

The Eur. Erg. certification system

Some keys favouring quality

- *Mechanisms to avoid biased evaluations by national assessment boards :*
 - “full” assessment of NAB members at the CREE level
 - appeal committees
 - regular monitoring of national procedures by the CREE Board and meeting with the NAB thanks to the rotating location of Council meetings

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The Eur. Erg. title

Impact on the ergonomics profession

- the HETPEP framework has proven its value and feasibility to assess professional competencies
- the professional image of ergonomics has been enhanced
- flexibility and integrative approach in assessing ergonomists' practices have been kept due to permanent efforts at the national and CREE levels

The Eur. Erg. title

Impact on the ergonomics profession

- the registration system has had little impact on ergonomists mobility throughout Europe (aim 3)
- ergonomics training curricula have been created or modified in several countries to match the education model requirements (aim 1)
- the title has been accepted as a quality criterion, in some countries, when applying for public funding or when answering public orders

The Eur. Erg. title

Impact on the ergonomics profession

- The Position and Success of Certified European Ergonomists

Petra Bredveld and Jan Dul

RSM Erasmus University, Rotterdam

July 2005

www.eur.nl/fbk/dep/dep6/members/dul/

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Frequently debated questions

- Should we keep the initial basic principle : first certification must be limited to those ergonomists showing some understanding across the whole field?
- Or should we adapt the rules taking into account the increasing specialisation in the ergonomics discipline (IEA 2000 – updated definition) between
 - Physical aspects
 - Cognitive aspects
 - Organisational aspects

Frequently debated questions

- Updating the certification standard ? Revising the HETPEP document ? Establishing some common standards at the IEA level ? Taking into account
 - the likely impact of the EU Bologna agreement
 - the needs and requests of a rapidly changing society
- A working group is now established and will submit proposals at the November Council meeting ; collaboration with the MEE-IEA subcommittee is planned

Frequently debated questions

- Building an accreditation system for ergonomics courses within the EU ? A 5-yr internal debate!
- A pilot assessment of the post-graduate ergonomics course run by the VU university Amsterdam was completed in April 2004 to assess its conformity with the HETPEP education model
- The Council must now decide whether or not offering this additional service on a regular basis

The Eur. Erg. certification system

The Nordic situation

- Swedish national assessment board was set up in about 1988
- Replaced by CREE membership 1993
- National Assessment Board for entire NES set up in about 1996
- Finland wanted their own NAB, set up 2000
- NES NAB now representing Denmark, Iceland, Norway, and Sweden

The Eur. Erg. certification system

The Nordic situation

- NES NAB
 - Anders Sundin, CARAN, Gothenburg
chairman and CREE representative
 - Roland Örtengren, Chalmers, Gothenburg
treasurer
 - Ulla Munck Ulfsfält, (Alviva), Gothenburg
 - (Ann-Cathrine Edlund Persson, Stockholm)

The Eur. Erg. certification system

The Nordic situation

- How to handle applications from Denmark, Iceland and Norway when they come?
- A person, as suggested by the national ergonomics society, will be appointed to the NAB to help in evaluating the application

***Certification of
ergonomists : A look at
the European experience***



Thank You!