

# An overview and some trends in European Ergonomics

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#### Introduction

• FEES is the Federation of the European Ergonomics Societies. Its mission is to enhance the recognition of ergonomics contributing to economic development, to quality of life, to health and safety at work, and to social progress in European Countries.

#### WHO WE ARE

- IEA International Ergonomics Association
- FEES Federation of European Ergonomics Society
- CREE Centre for Registration of European Ergonomists
   Ergonomist in EU
- National Ergonomics Sociaties



#### What is FEES

- European network setup in 2003
- 20 ergonomics federated societies
- More than 4000 affiliated practitioners
- One of the IEA regional networks, alongside ULAERGO (Latin -American network), SEANES (South East Asian network) and ErgoAfrica



# FEES is the Federation of the European Ergonomics Societies

- Establishing an European Task Force (EUTF), to promote ergonomics / human factors at the EU-organisation and its related bodies.
- The dissemination of information about various facilities by the European Union for the FEES-members.
- The preparation of this website, which is managed by a special working group, to facilitate cooperation and information-exchange between members and to communicate externally.
- The organisation of FEES-sessions on actual European topics at the annual national conferences in the various countries.
- Promoting European wide activities related with education, certification and accreditation in cooperation with the Centre for Registration of European Ergonomists (CREE).
- The preparation and publication of promotional material, via the Communication and Promotion Committee.



#### Strategic challanges

- Upcoming elections for President and Secretary General (August)
- Strategic planning of FEES activities in the scope of IEA regional networks
- Re-engage with former federated societies
- Expand the support to less established societies and to EHF European communities Re-organising East
- Diversity in EU, e.g. recognition or trainings of ergonomics
- EME 2018-19
- EU-OSHA 2020-21







### What is ergonomics?

- Good chair?
- Control room / cookpit design?
- Armrest / mouse / brain interface?
- wMSD? Risk assessment?
- Posture / force / duration / vibration?
- Safety? Comfort? Usability?
- Vocational rehabilitation?
- Patient safety?
- Participate workplace development?
- Innovation management?

- What is ergonomics (for nonergonomists)?
- · Who are ergonomist?
- What to promote? NOT the just the word



# **European Month of Ergonomics** since 2009

- Know your ergonomics ...
- Ergonomics provides the knowledge and skills for fitting the environment, equipment and activities to people
- The dual aims of ergonomics are to improve the well-being of people and to enhance productivity of work systems
- Ergonomics is a scientific discipline and development tool to create healthy and effective work places
- Ergonomics is a very good investment
- Ergonomics is a profession with requirements







#### KNOW YOUR ERGONOMICS

- Ergonomics is knowledge and skills how to fit work for workers
- •Ergonomics improves human wellbeing
- •Ergonomics enhances productivity and improves the quality of work

- •Ergonomics consists of different areas:
  - Physical ergonomics (materials handling, repetitive movements, workplace layout)
  - Cognitive ergonomics (mental workload, decision-making, skilled performance, humancomputer interaction)
  - Organizational ergonomics (optimisation of sociotechnical systems, including their organizational structures, policies, and processes)
- •Ergonomics is a key for co-operation!

European Month of Ergonomics KNOW YOUR ERGONOMICS OCTOBER, 2009



# What is European Month of Ergonomics?

- The European month of ergonomics (EME) is an annual campaign for the promotion of ergonomics in Europe.
- The EME is initiated by the Federation of European Ergonomic Societies (FEES) and implemented by the national Ergonomics societies.
- The FEES is an official partner of the European Agency for Safety and Health at Work (EU-OSHA).
- The EME 2018 and 2019 supports the EU-OSHA Healthy Workplaces Campaign. In 2018 and 2019 the topic of the EU-OSHA campaign is:



#### **MANAGE DANGEROUS SUBSTANCES**

The corresponding FEES campaigns EME 2018 and 2019 focus on the role of ergonomics within this topic:

**ERGONOMIST TO MANAGE DANGEROUS SUBSTANCES BETTER** 



#### Our contribution

Az ismétlődő

munkafeladatol

Risk Assessment and Ergonomics

#### Are You Ready to Act?

Every three-and-a-half minutes, somebody in the EU dies from work-related causes.

Every four-and-a-half seconds, a worker in the EU is involved in an accident that forces him/her to stay at home for at least three working days.

- Time to Risk Assessment!

Source: http://osha.europa.eu/en/campaigns/hw2008/why/index\_html

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You Can Do Something

- munkabővítés hasonló részfeladatok hozzáadást jelenti a dolgozó által végzett

Az erősen fragmentált, alacsony terhelésű mi

csökkentésére három alapmódszert iavasolna munkagazdagítást. Ezeket az alapelveket gy

teamek tevékenységének megszervezésekor

munkarotáció (lásd a lenti illusztrációkat olyan feladatok között, amelyek különböző má munkagazdagítás nagyobb követelmény

federation of How can the age-related changes be tackled by ergonomic measures? (6/7)

6. Support easy perceiving, decision making

make important information explicite and clearly visible or audible

use large characters (height at least 3 mm

with good contrast at normal viewing distance)







ort ows the







2017 - Ergonomics for all ages

- FEES is a reliable partner in the EU, a gateway to national associations and individuals
- We work by our members country level with focal points and individuals
- Organise events or sessions
- **Relay** information
- Mainstream message into education
- **Communicate** what you are going to do
- Organise thesis contest on the subject
- **Submit best practices**
- Feed back what you done
- Translate / adapt / improve the EME material

design and locate the checkpoints and maintenance objects to minimize moving distances and to facilitate easy and safe maintenance

Physical aspects of maintenance 3

use proper equipment to move, and to reach maintenance points

In example, to ease physical load and to enhance safety:

use proper tools to perform the maintenance tasks



operator

EME European Month of Ergonomics 2010 - Ergonomics - a Key to Safe Maintenance



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# FFES attendance and lectures to conference in EU

- Munich
- Timisoara
- Poznan (Polish Ergonomics Society)
- Zadar (Croatian Ergonomics Society)
- Belgrade
- Birghimham (the Human factors and Ergonomics Institute)
- St. Petersburg
- Lisbon (APERGO)



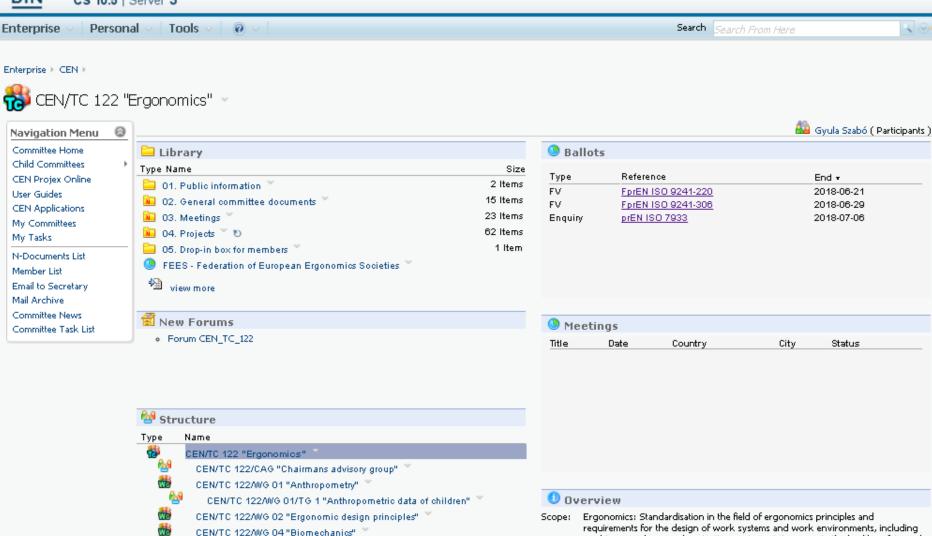
# Cooperation with European Institutions and Networks

- Attendance to PPE Sector Forum, PPE Working Group and Machinery working group
- ETUI: Project on machines and ergonomics:
  - Questionnaire in order to obtain a feed-back in the field of the machines design
  - ETUI workshop and conference
- ErgoMach
- Erasmus proposals



# The FEBC conference on the issues of 'creativity and ergonomics'

- A process at European level: the close cooperation between four organisations: FEES, CREE, ETUI and BES
  - The IEA endorsement and participation
  - The attendance of relevant EU bodies
- The conference aims:
  - to promote ergonomics and ergonomists at European and national level
  - to develop relations between ergonomists at European and national levels
  - to boost relationships between EU bodies and FEES
  - to improve trade union capacity and knowledge on ergonomics
- Participants: ergonomists, trade unionists, occupational doctors, ...
- The speakers from various standpoints, various disciplines and countries



Wa

We

We

CEN/TC 122/WG 05 "Ergonomics of human-system interaction".

CEN/TC 122/WG 11 "Ergonomics of the Physical Environment"

CEN/TC 122AWG 14 "Ergonomics of PPE systems"

machinery and personal protective equipment, to promote the health, safety and

well-being of the human operator and the effectiveness of the work systems.

Search From Here





#### Type Name

We

ISO/TC 159 "Ergonomics"

ISO/TC 159/CAG "Chairman Advisory Group"

ISO/TC 159/SC 01 "General ergonomics principles"

ISO/TC 159/SC 01/WG 01 "Principles of ergonomics and ergonomic

design"

ISO/TC 159/SC 01/WG 02 "Ergonomic principles related to mental." work"

We ISO/TC 159/SC 01/WG 05 "Ergonomic process standards"

ISO/TC 159/SC 03 "Anthropometry and biomechanics".

ISO/TC 159/SC 03/WG 01 "Anthropometry"

ISO/TC 159/SC 03/WG 04 "Human physical strength, manual handling

and force limits"

œ ISO/TC 159/SC 04 "Ergonomics of human-system interaction" 🥈

ISO/TC 159/SC 04/CAG "Chairman Advisory Group"

ISO/TC 159/SC 04/JWG 28 "Joint WG between ISO/IEC JTC 1/SC 7.

and ISO/TC 159/SC 4, Common Industry Formats for Usability Reports".

ISO/TC 159/SC 04/WG 01 "Fundamentals of controls and signalling methods"

ISO/TC 159/SC 04/WG 02 "Visual display requirements" "

ISO/TC 159/SC 04/WG 03 "Controls, workplace and environmental

requirements"

ISO/TC 159/SC 04/WG 05 "Software ergonomics of human-computer interaction"

ISO/TC 159/SC 04/WG 06 "Human-centred design processes for interactive systems"

ISO/TC 159/SC 04/WG 08 "Ergonomic design of control centres".

ISO/TC 159/SC 04/WG 09 "Tactile and haptic interaction".

ISO/TC 159/SC 04/WG 10 "Accessible Design for Consumer Products"

ISO/TC 159/SC 04/WG 11 "Ease of operation of everyday products" We

ISO/TC 159/SC 04/WG 12 "Image safety"

ISO/TC 159/SC 05 "Ergonomics of the physical environment".

ISO/TC 159/SC 05/WG 01 "Thermal environments"

ISO/TC 159/SC 05/WG 04 "Integrated environments"

ISO/TC 159/SC 05/WG 05 "Physical environments for people with

special requirements"

ISO/TC 159/WG 02 "Ergonomics for people with special requirements"

#### 🕛 Overview

Ergonomics: Standardization in the field of ergonomics, in particular, general ergonomics principles, anthropometry and biomechanics, ergonomics of human system interaction and ergonomics of the physical environment, addressing human characteristics and performance, and methods for specifying, designing and evaluating products, systems, services, environments and facilities

Excluded,

Standardization of purely technical matters not related to human characteristics and abilities



# MoU - Centre for Registration of European Ergonomics

- A representative of the CREE will attend FEES Council meetings once per year at the cost of CREE AND vica versa.
- Both organisations keep the other informed of activities and seek collaboration in activities concerning the promotion of professional standards.
- The websites of both organisations are linked to each other where the content concerns professional affairs and education.



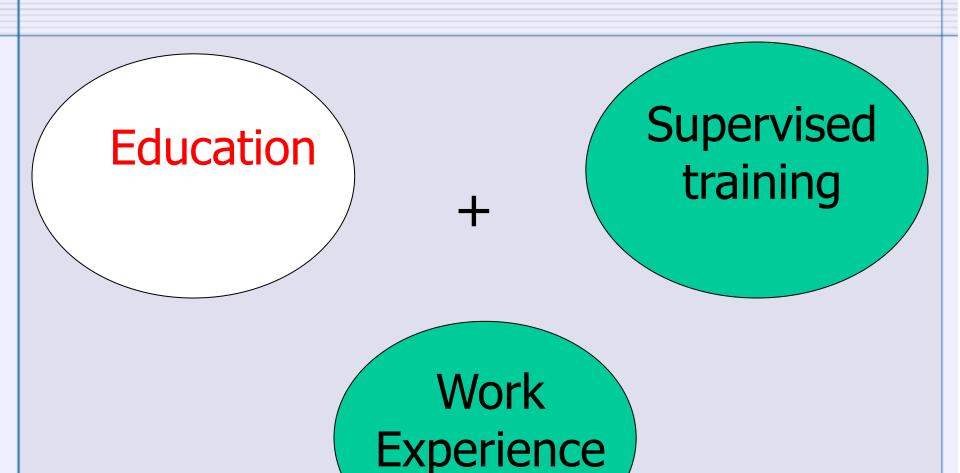


#### **CREE Aims**

- 1. Provide framework for assessing professional competence of ergonomists
- 2. Define a minimum standard useful for people requiring the services of professional ergonomists
- 3. Leave flexibility for training institutions in designing ergonomics courses
- 4. Assist the mobility of qualified ergonomists between countries.
- 5. Promote the professional image of ergonomists



# Minimum Requirements for certification





#### **Education requirements**

- Courses and seminars:
  - a minimum of 60 ECTS (or 600 contact hours)
  - assessed in 10 areas of knowledge
  - specialisation possible in physical, cognitive or organisational ergonomics, basic training necessary in all
- Integration of knowledge in practical project (min. six weeks or 240 h)



# 10 Areas of knowledge (at least 2 ECTS in each / at least 48 in yellow marked courses)

- Principles of Ergonomics
- Populations and General Human Characteristics
- Design of technical systems
- Research, evaluation and investigative techniques
- Professional issues
- Ergonomics: Activity and/ or Work Analysis
- Ergonomic Interventions
- Ergonomics: physiological and physical aspects
- Ergonomics: psychological and cognitive aspects
- Ergonomics: social and organisational aspects



# MoU - INTERNATIONAL ERGONOMICS ASSOCIATION

MEMORANDUM OF UNDERSTANDING ON COLLABORATION BETWEEN IEA AND FEES REGARDING

SCIENTIFIC, TECHNICAL AND PROFESSIONAL COLLABORATION FOR THE DEVELOPMENT OF HUMAN FACTORS AND ERGONOMICS IN EUROPE



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### The collaboration is not limited

to:

- Exchange and collaboration for strategic documents on development and promotion of HFE,
- Exchange of scientific information and publications,
- Exchange of information on research, professional standards and education programs,
- Exchange of information on ergonomics practices,
- Collaboration for supporting projects of IEA member societies,
- Mutual invitation of representatives to relevant meetings and other events the two parties maybe involved in, thereby fostering regular meetings of the IEA and FEES at federated society events as well as joint IEA-FEES meetings with federated societies.



### Scope of both organizations

- To raise awareness of the importance and benefits of HFE in organizations and societies,
- To develop and share common understanding of HFE as a science,
- To use creative means such as social media platforms to grow online communities with an active interest in HFE,
- To enhance learning tools, participative methods and update knowledge in order to provide our members with information on the best practices and scientific knowledge,
- To set up a map of the training and educational centers in HFE across the globe,
- To develop resources and services to the benefit of the IEA and FEES member societies (such as HFE employment opportunities and exchange programs),



# Scope of both organizations (cont'ed)

- To contribute to exchanges between HFE professionals (with the organization of congresses, conferences, seminars, webinars...),
   To improve the cooperation among HFE professionals and the achievement of ergonomics actions which are necessary in a global world,
- To develop and value the existing geographical and sectorial networks in ergonomics, such as ULAERGO, SEANES, ERGOAFRICA, and FEES,
- To influence the policy makers at European and global level and their organizations,
- To identify and foster the co-operation with the interested stakeholders (such as ILO, WHO, ISSA, OSHA, European project H2020...) that may support our approaches.



### The practical collaboration

- Organization of joint meetings and seminars,
- Promotion of outreach activities of Human Factors and Ergonomics (e.g., Global Ergonomics Month, sharing of outreach activities aimed at the community and public level or other),
- Collaboration in the field of development, training/education and professional standards in Europe,
- Publication of joint guidelines, position papers and related documents,
- Publication of joint statements relating to international development and professional standards, education in Human Factors and Ergonomics within a European context, and general promoting information to the public,
- Collection of case studies published in cooperation with CREE,
- Financial collaboration from one body to the other for the setup of common projects.



# MoU European Safety Federation



- To promote the ergonomic design and use of Personal Protective Equipment (PPE);
- To contribute to the feedback from the field on the quality and the real use of PPE;
- To promote the training of different actors in this field (users, distributers, prevention experts...);
- To include a mutual link on the websites with a short description of the objectives of the partner;
- To promote activities (such as conferences, seminars, workshop, promotional events...) organized by the other partner through their own information channels (website, newsletter...).



#### **Endorsed by FEES**



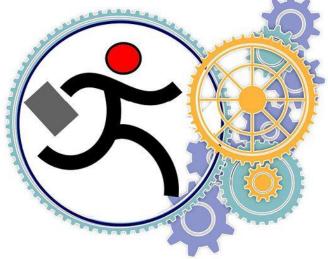












Poznan - POLAND, May 23-25, 2018

Human factors in a contemporary organization

1st Call for Papers





### When planning your year

- Use our topics
  - IEA 2018 / Creativity
  - EME / healthy workplaces
- Let your events be in the FEES calendar
- Ask for endorsement
- End USE FEES calendar



To submit information about events related to ergonomics / human facto



# Useful materials: ergonomics-fees.eu

- Calendar
- Educational Institution List
- Best practices
- European Months of Ergonomics
- RSS feed: http://ergonomicsfees.eu/rss.xml





#### Give feedback

info@ergonomics-fees.eu

Thank you!



# Minimum educational requirements (1)

Area of Knowledge	Recommended Topics
A.Principles of Ergonomics	Definitions
	Aims
The candidate is able to integrate	Approach
his or her knowledge of the	Introduction to complex systems
definition, aims and approach of	User-centred design
ergonomics into work activities.	Theory of ergonomics practice.
B. Populations and General	
Human Characteristics	
	Anatomy, Physiology and Biomechanics
The candidate has a basic	Work physiology
understanding of fundamental	Cognition
human physiological and	Perception
psychological characteristics and	Circadian Rhythm
can analyse problems taking	Age and gender differences
them into account.	Disabilities



# Minimum educational requirements (2)

#### C. Design of Technical systems

The candidate has a basic understanding of fundamental engineering principles and systems design and can solve problems taking them into account.

Design for assembly

Production system design (e.g. mechanization, automation, cycle time, buffers, variation)

Materials handling

Design for maintenance

Architectural design

### D. Research, evaluation and investigative techniques

The candidate can evaluate results using appropriate statistical methods and instruments and is able to evaluate the quality of ergonomics research reports written by other people.

Experimental design and evaluation

Survey methods

Qualitative and quantitative measurements

Descriptive and inferential statistics

Information systems and information technology



# Minimum educational requirements (3)

#### E. Professional Issues

The candidate knows the laws and standards that are applicable to his or her work and can synthesise this knowledge into his or her recommendations.

The candidate understands the ethical requirements and limits of his or her work and can reflect on his or her activities using this knowledge.

The candidate can communicate his or her professional knowledge effectively to other people and synthesise his or her knowledge into comprehensible and legally adequate project documentation.

Ethics
Standards, laws and legal activities
Reporting and documentation
Client/consultant relationships
Teaching and instructing



# Minimum educational requirements (4)

#### F. Ergonomics: Activity and/ or Work Analysis

The candidate knows the methods for conducting an activity or work analysis and is able to choose an appropriate method, reflecting on its strengths and weaknesses.

Task and system analysis and evaluation Methods and instruments for measuring human activity Methods of activity analysis

#### **G.** Ergonomic Interventions

The candidate understands the theoretical aspects of designing and evaluating appropriate ergonomics intervention projects.

Methods and design of intervention projects Evaluation of ergonomics projects



# Minimum educational requirements (5)

Where a candidate is specialised in one knowledge area, he or she should have enough knowledge and understanding of the other areas to take appropriate action when problems arise relating to them.

## H. Ergonomics: physiological and physical aspects

Workplace layout and design

Anthropometry

**Posture** 

Repetitive workloads

Manual Handling / Heavy loads

Work-rest cycles

#### Physical environmental factors

Methods and instruments for measuring physical

environment

Climatic and thermal factors

Lighting

Sound

Vibration and acceleration

**Pressure** 

Air quality

Electromagnetic radiation



# Minimum educational requirements (6)

I. Ergonomics:	Human information processing	
psychological and cognitive	Human reliability	
aspects	Allocation of functions	
	Information design	
	Controls and displays	
	Human machine interaction	
	Fatigue/workload/vigilance	
	Emotional aspects of design	
J. Ergonomics: social and	Systems theory	
organisational aspects	Organisation design	
	Work organisation / work flow / logistics / work load	
	Group vs individual work	
	Job allocation and design	
	Participation and autonomy	
	Organisation culture	
	Management of change(s)	
	Motivation and attitude change	



### **Experience Requirements**

 Supervised training for 1 year plus independent experience for 2 years

OR

3 years of independent experience



### **Evaluation of Experience**

- Employment history
- References (ideally from other certified ergonomists)
- Submission of work examples (Project reports)



### **Project reports**

- These should show an ability to design, or modify a workplace, work organization or tools (not just assess risks)
- Ideally they should show applications in a range of domains, particularly including physical, cognitive and organizational issues.



#### Renewal of certification

- Certification only lasts 5 years
- Application for renewal requires proof of:
- Continuing employment in the area of ergonomics
- Keeping knowledge up-to-date (reports of attendance at courses, congressess, new fields of work, publications, etc.)



### Society Membership: Structural Requirements

- A National Assessment Board composed of at least 3 certified European Ergonomists
- National application forms with Code of Conduct
- Written procedures (non-discriminatory)
- A development plan
- Review committee



# How to apply for CREE certification

- When the regional ergonomics society has more than 3 certified people, discuss becoming a society member with a member of the CREE Board
- Invitation to send a representative to the next CREE meeting
- "Mentor" will be appointed to assist with application



### **CREE Membership obligations**

- Maintain a functioning National Assessment Board and representation at CREE meetings twice per year (at cost of own society)
- National Assessment Board assesses local applicants and prepares summary information on candidates for CREE decision (online application process)
- Review of all applications from other member societies
- Each assessment costs EURO 150