FHN3002 The Ergonomics of Muskulosceletal Healt 7.5 cred-its

Belastningsergonomi - teori, metod och intervention

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for FHN3002 valid from Autumn 2012

Grading scale

Education cycle

Third cycle

Specific prerequisites

Admission to postgraduate studies in relevant disciplines.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The overall purpose is to give students a deeper knowledge and understanding of the work impact on the health of the musculoskeletal system and how to design work systems and environments that prevent work-related musculoskeletal disorders and promote health and efficiency.

- The students must demonstrate knowledge and understanding about:
- Man's physical and mental conditions and needs and how they meet the requirements of today's working life
- Methods for measuring and assessing the job requirements, the burden on the individual and the effects of short and long term
- Methods to investigate the relationship between job requirements and impact on the individual
- Today, valid hypotheses and theories of injury mechanisms and risk and health factors for work-related musculoskeletal disorders
- Current legislation in the musculoskeletal health area
- Opportunities and barriers to change in organizational and individual level

The students must show skills and ability to:

- Use ergonomic objective and subjective methods for evaluating the work of physical and mental demands of the various load environments
- Propose measures to improve the health of the musculoskeletal system
- The students must show judgment and approach by: Critically review, analyze and evaluate scientific literature in the musculoskeletal health area
- Analyze and evaluate the results of ergonomic measurements and a summary of the results both orally and in writing
- Evaluate measures to improve the health of the musculoskeletal system
- Contribute to the development of healthy and effective working system based on an ergonomic expert role

The students must show judgment and approach by:

- Critically review, analyze and evaluate scientific literature in the musculoskeletal health area
- Analyze and evaluate the results of ergonomic measurements and a summary of the results both orally and in writing
- Evaluate measures to improve the health of the musculoskeletal system
- Contribute to the development of healthy and effective working system based on an ergonomic expert role

Course contents

- Anatomy and exercise physiology with emphasis on the musculoskeletal system
- Anthropometry and biomechanics

- Musculoskeletal disorders and diseases
- Work-related injuries
- Work physical and mental requirements and test methods
- Current hypotheses and theories of injury mechanisms and risk and health factors Recommended limits and legislation
- Workplace Assessment, evaluation and design of jobs and workplaces
- Processes of change

Course literature

Toomingas, A; Mathiassen, S E; Wigaeus Tornqvist, E (red), **Arbetslivsfysiologi**, Lund 2008, Studentlitteratur
Nordin, M; Frankel, V H, **Basic Biomechanics of the Musculoskeletal System**, Baltimore 2001, Lippincott Williams & Wilkins
Wilson, J H; Corlett, E N (red), **Evaluation of Human Work**, 3rd Edition, Boca Raton 2005, Taylor & Francis
Andersson, I, **Epidemiologi för hälsovetare - en introduktion**, Lund 2006, Studentlitteratur
Aktuella bokkapitel och forskningsartiklar som delas ut / Recent book chapters and research papers are handed out

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Assignment, laboratory, workplace assessment and review of research articles

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.