

Course description:

## Interdisciplinary perspectives on work, stress, health and performance: Part I

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*Course language:* English

*Course credits:* 3.5

*Course period:* March 29<sup>th</sup> – April 28<sup>th</sup> 2017

*Course level:* Doctoral level

*Host department:* Department of Psychology, Stockholm University

*Eligibility criteria:* Admitted to postgraduate studies within the social sciences, including Public Health

*Sign up:* *via email to SSC graduate school coordinator Lena Låstad* [lena.lastad@psychology.su.se](mailto:lena.lastad@psychology.su.se) *as soon as possible and no later than February 28<sup>th</sup>. Note that the number of participants will be limited and registration is on a first-come, first-served basis.*

# Interdisciplinary perspectives on work, stress, health and performance: Part I

## Course Content

The concept of stress inherently spans the macro-level, focusing on the organization of societies and public policies, to the micro-level, exploring psycho-physiological processes and mechanisms, and research advancing knowledge in this area should, therefore, be interdisciplinary. The general aim of the course is to bridge the existing gap between different disciplines by presenting and discussing interdisciplinary perspectives on work-related stress – its causes, and effects on health and performance. Drawing on the combined expertise of the research units involved in the Stockholm Stress Center Graduate School, the course offers a unique interdisciplinary learning environment for gaining in-depth understanding of stress in various work contexts.

## Course Structure

An introductory workshop on stress is given on the first course day, where the concept of stress is introduced from an interdisciplinary perspective. The main part of the course is then given at the six research units within in the SSC Graduate School – the Division for Work and Organizational Psychology at Stockholm University, the Epidemiological unit and the Sleep unit at the Stress Research Institute, Stockholm University, the Division of Psychology and the Division of Insurance Medicine at Karolinska Institutet, and Centre for Musculoskeletal Research at Gävle University. The research units offer one course day each. The course days will be including research presentations, a literature seminar, and discussions about the research carried out within the respective unit. The course days are concluded by a seminar discussing the overall relations between the different research fields and their connection to the notion of stress. Before each course day course participants should prepare questions for discussion to the articles read.

A description of the six research units follows here:

### *The Division of Work and Organizational Psychology*

Research within the work- and organizational psychology division focuses on the contexts of working individuals: in groups, in the organization, and in relation to different constellations and roles in society. The balance and interplay between paid work and the rest of life has an important place in our research as well as stress and health, personal and occupational development, and the individual's position in the labor market. Among the work environmental factors, special attention is given to organizational and technical changes, new organization and employment types, new reward systems, and work flexibility.

### *The division for Epidemiology*

The research area of Epidemiology focuses on improved understanding of how stress-related illnesses and health problems arise and can be prevented in and outside of the workplace. In particular, we focus on how working life, in a broad sense, affects health, taking also factors outside working life into consideration, e.g. retirement, unemployment, health behaviors, and the balance between work and private life.

### *The division for Sleep & Alertness Research*

The main research themes of the Sleep/Fatigue Division at Stress Research Institute are experimental lab and field studies related to how psychosocial stress affects sleep, recovery, wakefulness, performance (including cognitive functioning) and biomarkers of circadian rhythms and neurophysiological processes. Insufficient sleep (and in some situations, circadian disruption) is

regarded as a key mediator (mechanism) of the relation between stress and adverse health consequences. According to the "stress and sleep hypothesis", exposure to psychosocial stress without disturbed sleep or impaired recovery may not cause chronic health problems. The measurement of sleep involves subjective ratings, activity monitoring (actigraphy), and polysomnographic (physiological) sleep recordings. The measurement of psychosocial stress refers mainly to difficult working time arrangements (e.g. shift work) and high workload, but also sleep loss as a cause of increased stress responses. The division also carry out field studies on light exposure and daytime function, e.g. on shift workers and high school students.

The division is also involved in epidemiological research on work stress and disturbed sleep, and the health consequences of shift work and insufficient sleep. The epidemiological studies are carried out in collaboration with the Epidemiology Division at Stress Research Institute, Section of Insurance Medicine and other research groups at KI.

#### *Division of Insurance medicine*

Within the Division of Insurance Medicine there are several ongoing interdisciplinary research projects on sick leave practice, return to work, the causes of sick leave and its consequences. Both epidemiological and qualitative analysis methods are applied. The traditional social medicine perspective, with a focus on social inequalities, marginalization, etc. is supplemented with a gender perspective and a health perspective.

#### *The division for Psychoneuroimmunology*

In the research area psychoneuroimmunology, the importance of behavior in the interplay between the brain, the endocrine and the immune system is studied. Within this framework, we study how stress and sleep influences the immune system, and how the immune system in turn influences brain function, fatigue, self-rated health, pain sensitivity and social interactions. Several studies concern biological and psychological determinants for subjective health. These studies are performed both with experimental methods - such as causing a short-lived harmless inflammatory reaction which entails a transient feeling of sickness – and through longitudinal observational studies in different populations.

#### *Centre for Musculoskeletal Research (CBF)*

The Body at Work - from Problem to Potential. This is the name of the FORTE-center that was awarded to the Centre for Musculoskeletal Research (Centrum för belastningsskadeforskning, CBF) in 2009. Research at both the FORTE centre and at CBF is focused on musculoskeletal problems arising in working life, but also considers the possibility that properly selected work tasks and work organisation are a means to achieving better health. The research is divided into five programs: Physical and mental variation, Visual ergonomics, Cost-efficient measurement of physical load, Work environment and leadership, and Diagnosis and rehabilitation of musculoskeletal disorders. The different directions of the component programs demonstrate the breadth and diversity of scientific fields required to study physically healthy and unhealthy bodies in working life.

### **Expected Learning Outcomes**

Having finalized the course, students will be able to:

- Review the concept of stress, focusing specifically on work-related stress, its causes and effects, from an interdisciplinary perspective
- Independently formulate relevant questions that target the concept of work stress from an interdisciplinary perspective.
- To reflect on and critically assess the importance of gender, age, education, socioeconomic status, and different phases of life for work-related stress and health-related outcomes

## Examination

The grading in the course is on a pass or fail basis. The examination is based on the following criteria: (a) written submission of discussion questions in connection with the seminars, (b) completion of an individually written assignment clarifying how the course material around the concept of stress relates to one's own research.

## Course Literature

(Additional literature may be assigned)

### Workshop

- M McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*, 338(3), 171-179.
- SM Steptoe, A., & Marmot, M. (2003). Burden of psychosocial adversity and vulnerability in middle age: associations with biobehavioral risk factors and quality of life. *Psychosomatic Medicine*, 65(6), 1029-1037.

### Work and organizational psychology

- B Bernhard-Oettel, C., Rigotti, T., Clinton, M., & de Jong, J. (2013). Job insecurity and well-being in the temporary workforce: Testing volition and contract expectations as boundary conditions. *European Journal of Work and Organizational Psychology*, 22(2), 203-217.
- SHN Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: a meta-analysis and review of job insecurity and its consequences. *Journal of Occupational Health Psychology*, 7(3), 242-264.

### Epidemiology

- MH Magnusson Hanson LL, Chungkham HS, Åkerstedt T, & Westerlund H. (2014). The role of sleep disturbances in the longitudinal relationship between psychosocial working conditions, measured by work demands and support, and depression. *Sleep*, 37(12):1977-85.
- W Westerlund H, Vahtera J, Ferrie JE, Singh-Manoux A, Pentti J, Melchior M, Leineweber C, Jokela M, Siegrist J, Goldberg M, Zins M, & Kivimäki M. (2010). Effect of retirement on major chronic conditions and fatigue: The French GAZEL occupational cohort study. *BMJ*, 341:c6149.

### Sleep and alertness

- L Linton SJ, Kecklund G, Franklin, KA et al. (2015). The effect of the work environment on future sleep disturbances: a systematic review. *Sleep Medicine Reviews*, 23: 10-19.
- P Petersen H, Kecklund G, D'onofrio P, Nilsson J, Åkerstedt T. (2012). Stress vulnerability and the effects of moderate daily stress on sleep polysomnography and subjective sleepiness. *Journal of Sleep Research*, DOI: 10.1111/j.1365-2869.2012.01034.x.

### Musculoskeletal research

- H Hallman, D. M., Mathiassen, S. E., Heiden, M., Gupta, N., Jørgensen, M. B., & Holtermann, A. (2016). Temporal patterns of sitting at work are associated with neck-shoulder pain in blue-collar workers: a cross-sectional analysis of accelerometer data in the DPHACTO study. *International archives of occupational and environmental health*, 89(5), 823-833.
- SMH Srinivasan, D., Mathiassen, S. E., Hallman, D. M., Samani, A., Madeleine, P., & Lyskov, E. (2016). Effects of concurrent physical and cognitive demands on muscle activity and heart rate variability in a repetitive upper-extremity precision task. *European Journal of Applied Physiology*, 116(1), 227-239.

### Insurance medicine

- MB Mather L, Bergström G, Blom V, Svedberg P. (2014). The covariation between burnout and sick leave due to mental disorders is explained by a shared genetic liability: a prospective Swedish twin study with a five-year follow-up. *Twin Res Hum Genet*, 17(6):535-44.
- MR Mittendorfer-Rutz E, Kjeldgård L, Runeson B, Perski A, Melchior M, Head J, Alexanderson K. (2012). Sickness absence due to specific mental diagnoses and all-cause and cause-specific mortality: a cohort study including 4.9 million inhabitants of Sweden. *PLoS ONE*, 7(9):e45788.

### Psychoneuroimmunology

- C Cohen S, Doyle WJ, Alper CM, Janicki-Deverts D, Turner RB (2009). Sleep habits and susceptibility to the common cold. *Arch Intern Med*, 169(1):62-7.
- K Karshikoff B, Lekander M, Soop A, Lindstedt F, Ingvar M, Kosek E, Olgart Hoglund C, Axelsson J. (2015). Modality and sex differences in pain sensitivity during human endotoxemia. *Brain, behavior, and immunity*, 46:35-43.

### Course Schedule

Date	Time	Topic	Instructors	Reading
17-03-29	11-12	Course introduction	Erik Berntson and Lena Låstad	
	13-15	Workshop	Petra Lindfors	M, SM
	15-16	Lecture	Mats Lekander	
17-03-30	9-16	WO psychology	Magnus Sverke	B, SHN
17-04-05	9-16	Epidemiology	Hugo Westerlund	MH, W
17-04-06	9-16	Sleep and alertness	Göran Kecklund	L, P, ÅA, ÅG
17-04-18	9-16	Musculoskeletal research	Svend Erik Mathiassen	H, SMH
17-04-27	9-16	Psychoneuroimmunology	Mats Lekander and John Axelsson	C, K
17-04-28	9-16	Insurance medicine	Kristina Alexanderson and Ellenor Mittendorfer-Rutz	MB, MR
17-05-05		Deadline for handing in the written assignment		

#### Notes:

See *Course Literature* for readings abbreviations.  
The course will take place at the different SSC nodes.

### Other issues

The topics in this course are extended with the course *Interdisciplinary perspectives on work, stress, health and performance, Part II*. Participation in and completion of this course (*Part I*) is a precondition for participation in the second part of the course.