



Ergonomics/Human Factors (EHF) courses and qualifications at Massey University

2017

At [Massey University](#), the [Centre for Ergonomics, Occupational Health and Safety](#) in the [School of Public Health, College of Health](#), offers a number of Ergonomics/Human Factors (EHF) courses and qualifications at undergraduate and postgraduate level.

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Undergraduate courses in Ergonomics/Human Factors (EHF)

- [128.300: Ergonomics/Human Factors: work, performance, health and design](#) (S12 D)
- [128.200: Healthy Workplace Design](#) (S1 I(WN) D)
- [251.100: Work and Health](#) (S2 I(WN) D)

All three courses are taught in Internally (I) on Wellington (WN) Campus and by Distance (D) Learning. Summary content of each course is given at the end of this document. Further details are available by clicking on the hyperlink for each course or (for full details) by emailing Professor Stephen Legg (see contact address above). These courses can be taken as 'interest courses' and contribute to the minor in EHF (see below).

Undergraduate Qualification – Minor in Ergonomics/Human Factors (EHF) in the Bachelor of Health Sciences (BHlthSci)

The Minor in EHF is part of the [Bachelor of Health Sciences](#). Unfortunately Massey does not advertise nor specifically identify its Minors, so it will not be easily found on the Massey website (but you will find a [major in occupational health and safety](#)). However, the Minor in EHF comprises the following four courses:

- [128.300 Ergonomics/Human Factors: work, performance, health and design](#) (15 Credits)
- [128.200 Healthy Workplace Design](#) (15 Credits)
- [251.100 Work and Health](#) (15 Credits)
- Either [252.201 Sleep/Circadian rhythms/Shiftwork](#) (15 Credits) or [251.271 Occupational Health and Safety 1](#) (15 Credits)

Postgraduate courses in Ergonomics/Human Factors (EHF)

- [128.702: Work Capacity and Performance](#) (15 credits)
- [128.705: Ergonomics Analysis](#) (30 credits)
- [128.706: Micro-Macro Ergonomics](#) (30 credits)
- [128.707: People, Technology and Design](#) (15 credits)

All four courses are taught by Distance Learning over two semesters. The combined content of these four courses covers all of the educational elements required for [international](#) professional certification and as an [Associate New Zealand Ergonomist](#) (Assoc CNZE). Summary content of each course is given at the end of this document. Further details are available by emailing Professor Stephen Legg (see contact address above).

Postgraduate Qualification – Master of Public Health (MPH) - Ergonomics/Human Factors (EHF) elective papers

The above four EHF courses are elective options in the [Master of Public Health \(MPH\)](#) degree. In 2017, courses 128.702 and 128.706 will be offered. The four EHF courses combined with elective courses in professional praxis (taken with an EHF focus) will provide a student with the educational and supervised practice elements required for [international](#) professional certification and as a [New Zealand Ergonomist](#) (CNZE).

Postgraduate Qualification – Master of Health Sciences(MHlthSci) - Ergonomics/Human Factors (EHF) specialisation

From 2018, it is expected that the above four EHF courses are an elective specialisation in the Postgraduate Diploma in Health Sciences (PGDipHlthSci) and the Master of Health Sciences (MHlthSci) degree. In 2018, it is likely that only courses 128.702 and 128.706 will be offered. The four EHF courses combined with elective courses in professional praxis (taken with an EHF focus) will provide a student with the educational and supervised practice elements required for [international](#) professional certification and as a [New Zealand Ergonomist](#) (CNZE).

PhD in Ergonomics

Massey offers a [PhD in Ergonomics](#) by thesis. The most recent PhD was [Baiduri Widanarko \(Thesis: Interaction between physical and psychosocial risk factors for low back pain\)](#). The current PhD scholar is [Mark Lidegaard \(Thesis: Realist analysis of the uptake, use and impact of the ACC New Zealand Guidelines for Moving and Handling People\)](#).

Summary content of Ergonomics/Human Factors papers

128.300 Ergonomics/human factors (EHF): work, performance, health and design (15 Credits)

Integrated ergonomics, Physical ergonomics, Ergonomics systems design, Environmental ergonomics, Cognitive ergonomics, Organisational ergonomics, Shiftwork/Sleep/Jetlag, Sports Ergonomics, Ergonomics in Design, Ergonomics field study in industry, Eco-ergonomics, Ergonomics in Praxis

128.200 Healthy Workplace Design (15 Credits)

Ergonomics/human factors, WHO Healthy workplaces, Work, health and community, Creating a healthy workplace, Manual handling, Preventing discomfort, pain and injury, Computer workstation design, Healthcare workplace design in praxis.

251.100 Work and Health (15 Credits)

Positive and negative aspects of work, Good work, OHS management in organisations, Technology and work, Societal regulation of workplace health and safety, History and development of OHS legislation, Work and health in praxis

128.702 Work Capacity and Performance (15 credits)

Anatomy; Biomechanics and posture; Anthropometry; Energy and force production; Adjustments (stress and strain); Chronobiology (e.g. circadian rhythms); Basic and applied work-rest schedules; Climatic environment; Vibration; Simple and complex equipment and their potential and limitations; Assessing job requirements and worker capabilities.

128.705 Ergonomics Analysis (30 credits)

Ergonomics approach (history of work, current developments, paradigms (designing for individuals vs populations, working in normal vs extreme circumstances), interaction between society and work); Methods of measurement and investigation (simulations (static and dynamic), methods for observing activity and performance, interviews and questionnaires, epidemiological approach, sampling procedures, checklists); Work analysis (activity analysis, task analysis, function analysis, task interdependency, communication and co-operation, the importance of strategies in task execution); Instrumentation (simple and complex equipment, their potential and their limitations); Workplace design (measurement of activities and performance, workspace layout, use of mock-ups/simulations to improve designs, evaluation, compatibility between workplace requirements and human capabilities); Information design (signal detection, information processing and attention, display characteristics, information overload, stimulus-response compatibility); Work organisation design (co-operative analysis and design of new work systems, basics and applications of work-rest schedules, introduction of change); Professional issues (legislation, economics, the ergonomist in the organisation, ergonomics and society, role of ergonomist in social settings with different interest groups, ethics, development and marketing of the ergonomics profession).

128.706 Micro-Macro Ergonomics (30 credits)

Ergonomics principles (current developments and paradigms, interaction between work and society); Human psychology (psychophysiological and cognitive aspects of information intake, information handling and decision making, individual motivation, human development); Social and organisational characteristics (motivation and attitudes related to needs of individuals and to working group functioning, socio-technical systems); Systems theory (structure and dynamics of systems, human as a system component, system analysis and design e.g. allocation of functions, community ergonomics); Human reliability (accident models, attention, effort and vigilance, error taxonomies); Health, safety and well-being (occupational injuries and work-related disorders); Training and instruction (learning skills, learning knowledge, designing training programmes); Workplace design (measurement of activities and performance, workspace layout, use of mock-ups/simulations to improve designs, evaluation, compatibility between workplace requirements and human capabilities); Information design (signal detection, information processing and attention, display characteristics, information overload, stimulus-response compatibility); Work organisation design (co-operative analysis and design of new work systems, basics and applications of work-rest schedules, introduction of change); Professional issues (ergonomics and society, role of ergonomist in social settings).

128.707 People, Technology and Design (15 credits)

Applied ergonomics, User-centred design approach; Individual, gender-related, developmental, racial and cultural variability (anatomical, physiological and psychological factors, psychometrics); Design process and methods, interface design; Physical environment (visual environment, acoustic environment, human senses); Methods of measurement and investigation (simulations (dynamic and static), methods for observing activity and performance, interviews and questionnaires, sampling procedures, checklists, transgeneration and percentiles); Systems theory (human as a system component, system analysis and design); Technology (functionality, operation and construction of the technology, sociotechnical optimisation); Training (designing manuals); Workplace design (measurement of activities and performance, workspace layout, use of mock-ups/simulations to improve designs, evaluation, and compatibility between workplace requirements and human capabilities); Information design (signal detection, information processing and attention, display characteristics, information overload, stimulus-response compatibility); Work organisation design (co-operative analysis and design of new work systems, job/task design, design for mental activities, introduction of change); Professional issues (legislation, economics, the ergonomist in the organisation, ergonomics and society, role of the ergonomist in social settings, ethics, development and marketing of the ergonomics profession).