2017 Human Factors / Ergonomics Tertiary Qualifications, Programmes and Courses in New Zealand	
University/ Tertiary provider	**Massey University**
School/ Faculty/College	**College of Health (School of Public Health), College of Business (School of Aviation), College of Creative Arts (School of Industrial Design)**
Qualifications/Programmes	**Bachelor of Health Sciences (B Hlth Sci) (Minor in Ergonomics)** **Master of Health Sciences (M Hlth Sci) (Specialising in Ergonomics)** **Master of Public Health (MPH)(Optional courses in Ergonomics)** **Bachelor of Health Sciences (B Hlth Sci) (Major in Occupational Health and Safety)** **Bachelor of Health Sciences (B Hlth Sci) (Minor in Occupational Health and Safety)** **Graduate Diploma in Occupational Health and Safety (GDipOHS)** **Master of Health Sciences (M Hlth Sci) (Specialising in Occupational Health and Safety)** **Master of Public Health (MPH)(Optional courses in Occupational Health and Safety)** **Bachelor Aviation Management (B Av Man)** **Bachelor of Aviation (B Av)** **Master in Aviation (M Av)** **Bachelor of Design (Honours) (BDes(Hons))**
251.100	**Work and Health**
Delivery mode / Semester	Internal Wellington, Distance Learning / Semester 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	75
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 715.75 (domestic), NZ$ 3036.25 (International)
Frequency of offering	Annual
Students last 5 years	First offered in 2016, n= 25 (2016), n= 37 (2017)
Prescription	An exploration of the fundamental relations between work and health. Including: meaning of work, components of good work and workplace health and safety hazards and their impact on human health and organisational sustainability, and a historical introduction to regulation and management of occupational health and safety.
Learning outcomes	1. Identify factors of good work and their relation to health, 2. Identify health and safety hazards in the workplace and their effects on health, 3. Describe the relation between components of good work, human health and system performance, 4. Describe ways in which society regulates workplace health and safety, 5. Describe the elements of occupational health and safety management on an organisational level, 6. Describe the historical development of work and factors influencing workplace health and safety.
HFE Content/Topics	Good work, ergonomics/human Factors, healthy workplace design, human health, system performance
Other information	Also included in a Major in OHS in the BHlthSci
128.200	**Healthy Workplace Design**
Delivery mode / Semester	Internal Wellington, Distance Learning / Semester 1
Credit Value	15 Cr

Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 715.75 (domestic), NZ$ 3036.25 (International)
Frequency of offering	Annual
Students last 5 years	First offered in 2016, n= 15 (2016), n= 35 (2017)
Prescription	An ergonomics (human factors) approach to designing heathy workplaces by improving well-being, preventing ill-health and enhancing work system performance, using the World Health Organisations' framework model, with a practical focus on analysis of musculoskeletal discomfort, pain and injury, computer workstation design and selected industries.
Learning outcomes	1. Explain the principles of ergonomics /human factors, 2. Describe the World Health Organisation's framework model for healthy workplaces, 3. Know how to design workplaces that reduce the risk of musculoskeletal pain, discomfort and injury, 4. Know how to design computer workstations that can simultaneously reduce ill-health and enhance work, 5. Describe how healthy workplace design can help to prevent ill health in specified industry settings.
HFE Content/Topics	Ergonomics/Human Factors, Healthy Workplaces, Work, health and community , Creating a healthy workplace , Model for Action , Manual handling, Prevention of discomfort pain and injury , Computer workstation design, Healthcare workplace design , Conducting a healthy workplace design analysis
Other information	Also included in a Major in OHS in the BHlthSci
128.300	**Ergonomics/Human Factors: work, performance, health and design**
Delivery mode /Semester	Distance Learning / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 715.75 (domestic), NZ$ 3036.25 (International)
Frequency of offering	Annual
Students last 5 years	About 50-60 students annually
Prescription	An introduction to Ergonomics/Human factors (E/HF) - an inter-disciplinary holistic practice-based approach to integrate work, leisure and people in occupational, organisational, leisure (including sport, equipment, products, design and rehabilitation) environments to optimize matching of human-user-system health, performance, comfort and effectiveness: covering fundamental ergonomics principles, micro-macro-ergonomics, E/HF analytical methods, physical, psychological and social capacity and limitations of individuals and groups/teams in organizational socio-technical work and leisure environments.
Learning outcomes	1. Have an accurate understanding of the scope of the field of ergonomics/human factors and its fundamental principles, 2. Be aware of the need to research and apply knowledge about human behaviour, abilities, limitations and other characteristics in the design of work systems, 3. Be able to apply basic principles of ergonomics/human factors, 4. Understand the role of the practising ergonomist/human factors specialist
HFE Content/Topics	Introduction to Ergonomics, Integrated ergonomics, Physical ergonomics, Ergonomics system design, Environmental ergonomics, Cognitive ergonomics, Organisational ergonomics, Ergonomics methods, Ergonomics in design and Product Development, Sleep, jetlag and fatigue, Sports ergonomics, Eco-ergonomics.
Other information	A compulsory course in the Grad Dip OHS. Course included in the OHS Major in BHlthSci;

128.702	**Work capacity and performance**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 1121.19 (domestic), NZ$ 4132.50 (International)
Frequency of offering	Annual or biannual
Students last 5 years	About 2 students annually
Prescription	Ergonomics of the basic body systems, musculoskeletal, cardiovascular, respiratory and endocrine/neural as well as physiological energy expenditure responses and adaptation to physical work, anthropometric and biomechanical studies of group and individual factors affecting performance.
Learning outcomes	Recognise and measure the physical characteristics of people, their responses to their activities and their environments (climatic and vibration) with particular reference to health and performance; recognise, measure and specify the appropriate levels of and the characteristics of the climatic and vibration physical environment to be suitable for human activities; use the major measuring instruments, sensors, etc required by the ergonomist to gather data for investigation, design or evaluation of workplaces, work procedures or work equipment.
HFE Content/Topics	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; their potential and limitations; assessing job requirements and worker capabilities.
Other information	An optional course in the MPH. From 2018, proposed as a part of a specialisation in Ergonomics in the PGDipHlth Sci and MHlthSci;
128.705	**Ergonomics Analysis**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	300
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 1121.19 (domestic), NZ$ 4132.50 (International)
Frequency of offering	Annual or biannual
Students last 5 years	0
Prescription	Principles underpinning the ergonomics approach with focus on methods of measurement, investigation, work analysis including study of aspects of workplace, information and work organisation design as well as a study in industry, which will act as an exemplar for professional practice.
Learning outcomes	Be able to plan, conduct and report on a limited ergonomics industrial investigation using ergonomics principles and appropriate methods of measurement and investigation.
HFE Content/Topics	Ergonomics approach, Methods of measurement and investigation, Work analysis, Instrumentation, Workplace design, Information design, Work organisation design, Professional issues
Other information	An optional course in the MPH. Has not been offered for last 5 years. From 2018, proposed as a part of a specialisation in Ergonomics in the PGDipHlth Sci and MHlthSci
128.706	**Micro-macro Ergonomics**

Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	300
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 1121.19 (domestic), NZ$ 4132.50 (International)
Frequency of offering	Annual or biannual
Students last 5 years	About 2 students annually
Prescription	Ergonomics principles, human psychological, social and organisational characteristics related to ergonomics, systems theory, human reliability, training, instruction, workplace, information and work organisation design, and professional issues.
Learning outcomes	Apply knowledge of ergonomics principles and professional issues and of ergonomics aspects of human psychological, social, organisational and reliability characteristics, systems theory, training and instruction, workplace, information and work organisation design.
HFE Content/Topics	Ergonomics principles, Human psychology, Social and organisational characteristics, Systems theory, Human reliability, Health, safety and well-being, Training and instruction , Workplace design, Information design, Work organisation design, Professional issues.
Other information	An optional course in the MPH. From 2018, proposed as a part of a specialisation in Ergonomics in the PGDipHlth Sci and MHlthSci.
128.707	**People, Technology and Design**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Professor Stephen Legg
Cost	NZ$ 1121.19 (domestic), NZ$ 4132.50 (International)
Frequency of offering	Annual or biannual
Students last 5 years	0
Prescription	Ergonomics principles and practices for the design of products, equipment and complex systems. People in relation to the physical environment, technology and design.
Learning outcomes	Apply advanced knowledge of people and the user-centred approach within a technological design process.
HFE Content/Topics	Applied ergonomics, User-centred design approach.Individual, gender-related, developmental, racial and cultural variability, Design process and methods, interface design, Physical environment, Methods of measurement and investigation, Systems theory, Training, Workplace design, Information design, Work organisation design, Professional issues.
Other information	An optional course in the MPH. Has not been offered for last 5 years. From 2018, proposed as a part of a specialisation in Ergonomics in the PGDipHlth Sci and MHlthSci
251.271	**Occupational Health and Safety 1**
Delivery mode / Semester	Internal Wellington, Block Albany, Distance learning / Semester 1
Credit Value	15
Total Course Hours	150
HFE Content Hours	75
Co-ordinator/Tutor	Dr Kirsten Olsen
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 120 / year

Prescription	An introduction to Occupational Health and Safety and its application to workplaces in New Zealand. The course will explore the complex relationship between health and safety, factors in the working environment affecting health and safety and systems intended to regulate and manage the working environment.
Learning outcomes	1. Assess factors in an organisation that affect the health, safety and wellbeing of employees. 2. Analyse factors external to the organisation that influence the working environment. 3. Analyse how the key elements and methods of health and safety legislation and systematic Occupational Safety and Health management systems are applied at an organisational level. 4. Evaluate different analytical perspectives in the Occupational Health and Safety context. 5. Assess the strengths and weaknesses of different accident causation theories, hazard identification, and management methods.
HFE Content/Topics	Macro ergonomics, organisational ergonomics, systems ergonomics, participatory ergonomics, physical, cognitive, psychosocial and sociotechnical working environments, health workplaces
Other information	A compulsory course in the Grad Dip OSH
251.272	**Occupational Health and Safety 2**
Delivery mode / Semester	Distance learning / Semester 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	50
Co-ordinator/Tutor	Associate Professor Ian Laird and Dr Maxine Clark
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 100 / year
Prescription	A detailed study of hazards commonly found in the work environment.
Learning outcomes	1. Describe the nature and effects of chemical hazards commonly encountered in the workplace. 2. Explain the application of New Zealand legislation relating to hazardous substances and the strategies for the control of toxic substances in the workplace. 3. Explain principles of fire and explosion prevention and control. 4. Describe the properties and effects of noise, methods of determining exposure, and strategies to maintain a safe working environment. 5. Analyse how an occupational hygiene framework can be used to identify the health hazards arising from physical and biological aspects of a range of work environments.
HFE Content/Topics	Physical, chemical, biological and environmental hazards
Other information	A compulsory course in the GradDipOSH
251.370	**OHS Audit Paper**
Delivery mode / Semester	Block Wellington / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	30
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 35 / year
Prescription	An examination and critical analysis of current theories and practice in

	relation to auditing and assessing organisational health and safety performance.
Learning outcomes	1. Explain the principles of auditing health and safety practice. 2. Conduct a health and safety audit of an organisation. 3. Explain the rationale for processes used in the audit. 4. Assess the "ACC Audit Tool" in terms of its compliance to the requirements of New Zealand legislation.
HFE Content/Topics	Use of OHS audits
Other information	A compulsory course in the GradDipOSH
251.372	**Occupational Hygiene**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	30
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 42 / year
Prescription	A study of the principles of occupational hygiene and their application to the workplace in New Zealand. Topics include the recognition, evaluation and control of health hazards in the work environment; noise measurement and control; relevant legislation and standards; dust, vapour and gas measurement techniques; ventilation and case studies.
Learning outcomes	1. Explain in detail, the key principles and basic concepts of occupational hygiene practice. 2. Calculate dust, vapour and gas concentrations in air using practical examples. 3. Provide comprehensive and detailed explanations of types of stresses in the thermal environment, the measurement of the thermal environment, the effects of heat and cold on the body and the thermal indices used in the evaluation of thermal conditions. 4. Provide a detailed explanation of the principles of ventilation and calculate adequate volume flow rates. 5. Explain the principles of lighting and how adequate illumination levels are determined. 6. Provide detailed explanations of the principles of noise measurement and to determine whether noise levels in a particular situation are excessive. 7. Explain how occupational hygiene surveys are undertaken and the principles of exposure assessment.
HFE Content/Topics	Controlling physical hazards and exposures in workplaces
Other information	A compulsory course in the GradDipOSH
251.374	**Project in Occupational Health and Safety**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	30-150
Co-ordinator/Tutor	Dr Kirsten Olsen
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 30 /year
Prescription	An applied research course in which the student conducts an extended, systematic enquiry into a particular topic in occupational safety and health.
Learning outcomes	1. Assess and develop research aims, objectives and questions related to a

	chosen topic in Occupational Health and Safety. 2. Analyse key literature relevant to a chosen topic in Occupational Health and Safety. 3. Design an appropriate methodology for a specific project. 4. Evaluate ethical issues relevant to the research methodology. 5. Integrate and report the project results in an appropriate format.
HFE Content/Topics	All OHS projects have at least a small level of HFE content. Some projects could be 100% HFE, depending on the topic
Other information	A compulsory course in the GradDipOSH
251.770	**OHS Audit paper**
Delivery mode / Semester	Block wellington / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	60
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZ$ 2056 (domestic), NZ$ 7035 (international) plus NZ$ 1567 Component fee
Frequency of offering	Yearly
Students last 5 years	Average 4 / year
Prescription	A comprehensive examination and critical analysis of current theories and practice in relation to auditing and assessing organisational health and safety performance.
Learning outcomes	1. Understand the legislative framework for health and safety in New Zealand. 2. Understand the principles and conceptual models that have been developed for occupational safety and health auditing. 3. Understand the concepts of the measurement of management performance in health and safety. 4. Undertake a health and safety audit of an organisation. 5. Prepare an audit report and present the findings. 6. Demonstrate an understanding of concepts and tools of assessing safety culture in an organisation.
HFE Content/Topics	Use of OHS audits
Other information	
251.772	**Advanced Occupational Hygiene**
Delivery mode / Semester	Distance learning / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	60
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZ$ 2056 (domestic), NZ$ 7035 (international)
Frequency of offering	Yearly
Students last 5 years	Average 44 / year
Prescription	An advanced course studying the current issues in occupational safety and health, which involves the recognition, evaluation and control of health hazards in the work environment, including the study of noise, ventilation systems and air pollution.
Learning outcomes	1. Explain the key principles and basic concepts of occupational hygiene. 2. Measure and calculate dust, vapour and gas concentrations in air. 3. Explain stresses in the thermal environment, the measurement of the thermal environment, the effects of heat and cold on the body and the thermal indices used in the evaluation of thermal conditions. 4. Explain the principles of ventilation and calculate adequate volume flow rates. 5. Explain the principles of lighting and how adequate illumination levels are

	determined. 6. Explain the principles of noise measurement and determine whether noise levels in a particular situation are excessive. 7. Conduct an environmental hygiene survey, utilising principles of occupational hygiene.
HFE Content/Topics	Controlling physical hazards and exposures in workplaces
Other information	
251.773	**Advanced Hazard Management**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	60
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZ$ 2056 (domestic), NZ$ 7035 (international)
Frequency of offering	Annual
Students last 5 years	Average 15 /year
Prescription	A comprehensive analysis of Hazard Management and the application of Hazard Management methodologies and legislation.
Learning outcomes	1. Critically analyse Hazard Management legislation compliance. 2. Critically evaluate the application of Hazard Management principles. 3. Critically analyse the implication of Hazard Management systems.
HFE Content/Topics	Systems ergonomics in practice
Other information	
251.775	**Special Topic in Occupational Health and Safety**
Delivery mode / Semester	Distance Learning / Semesters 1 and 2
Credit Value	30
Total Course Hours	300
HFE Content Hours	60-300, depending on topic
Co-ordinator/Tutor	Associate Professor Ian Laird
Cost	NZ$ 2056 (domestic), NZ$ 7035 (international)
Frequency of offering	Annual
Students last 5 years	Average 4 /year
Prescription	A special course of individual supervised study
Learning outcomes	This course can take various flexible formats, from taking a substitute course to complete a qualification, or an advanced literature review, or a small research or practitioner project.
HFE Content/Topics	Some HFE content in all topics selected by students. Could be up to 100% HFE, depending on topic
Other information	
190.216	**Aviation Human Factors**
Delivery mode / Semester	Internal, Distance learning / Semester 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Dr J. Perezgonzalez
Cost	NZD 716 (domestic), NZD 3,298 (international)
Frequency of offering	Yearly
Students last 5 years	Average 53 / year
Prescription	The course provides an overview of the basic concepts of human factors most applicable to aviation management.
Learning outcomes	1. Critically analyse selected concepts that have led to contemporary Human

	Factors management practice. 2. Explain and evaluate the relevance of selected Human Factors management theories. 3. Critically assess selected Human Factors management cases.
HFE Content/Topics	Human Factors in Aviation (general overview)
Other information	
190.701	**Human Factors for Professional Aviation**
Delivery mode / Semester	Internal, Distance learning / Semester 1
Credit Value	30
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Dr J. Perezgonzalez
Cost	NZD 2,242 (domestic), NZD 8,265 (international)
Frequency of offering	Yearly
Students last 5 years	Average 9 / year
Prescription	An in-depth study of the latest developments in human factors policies and regulations made by the International Civil Aviation Organization (ICAO), with the aim of enhancing the safety, security and reliability of all areas of air transport. Contemporary research and research applications associated with the human factor aspects of aviation complements above study.
Learning outcomes	1. Identify a variety of human factors issues (definitions, risks, and hazards) of relevance to aviation. 2. Evaluate a variety of references from the scientific and professional literature relevant to human factors issues predominant in aviation. 3. Provide reasoned alternatives for the resolution of human factors issues relevant to aviation found in the scientific or professional literature. 4. Transfer theoretical understanding to effective business practice in aviation contexts.
HFE Content/Topics	Human Factors as they appear in ICAO's (International Civil Aviation Organization) publications
Other information	
190.117	**Introduction to Human Factors**
Delivery mode / Semester	Internal Manawatu, Distance Learning, Singapore – Semester 1 only
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Mr. Isaac Henderson
Cost	$715.75 (domestic), $3,297.50 (international)
Frequency of offering	Annual
Students last 5 years	96 in 2017, 71 in 2016. Varies between 60 and 110.
Prescription	This course examines human physiology and psychology within the context of the aviation industry. This will include human factors concerning many roles within the aviation industry, such as pilots, air traffic controllers, maintenance personnel, managers and regulators.
Learning outcomes	1. Demonstrate an understanding of the principles of sensory, perceptual and cognitive processing in an aviation context. 2. Demonstrate an understanding of the principles of individual and team behaviour in an aviation context. 3. Critically evaluate the strengths and weaknesses of a number of theoretical frameworks for threat, error and safety management. 4. Demonstrate an understanding of the principles of aviation medicine.
HFE Content/Topics	1. Introduction to Human Factors

	2. Physics of the Atmosphere 3. Human Physiology and Flight 4. Hyperventilation and Hypoxia 5. Vision and Visual Illusions 6. Hearing and Balance 7. Stress, Anxiety and Depression 8. Fatigue and Sleep 9. Human Information Processing 10. Judgement and Decision Making 11. Crew Resource Management and Communication 12. Threat and Error Management
Other information	Compulsory course in BAvMan degree, can be taken as an elective by other programmes
190.107	**Human Performance**
Delivery mode / Semester	Internal Manawatu / Semesters 1 and 2
Credit Value	15
Total Course Hours	150
HFE Content Hours	150
Co-ordinator/Tutor	Mr. Isaac Henderson
Cost	$883.93 (domestic), $4,045.00 (international)
Frequency of offering	Twice annually
Students last 5 years	30-40 annually
Prescription	The application of information processing strategies for improving performance in learning, problem-solving, decision-making, interpersonal interrelations, and an introduction to aviation medicine.
Learning outcomes	1. Demonstrate an understanding of the principles of sensory, perceptual and cognitive processing in an aviation context. 2. Demonstrate an understanding of the principles of individual and team behaviour in an aviation context. 3. Critically evaluate the strengths and weaknesses of a number of theoretical frameworks for threat, error and safety management. 4. Demonstrate an understanding of the principles of aviation medicine. 5. Demonstrate a practical knowledge of New Zealand Civil Aviation Authority's Human Factors requirements for a Private Pilot Licence (PPL) and a Commercial Pilot Licence (CPL).
HFE Content/Topics	1. Introduction to Human Factors 2. Physics of the Atmosphere 3. Human Physiology and Flight 4. Hyperventilation and Hypoxia 5. Vision and Visual Illusions 6. Hearing and Balance 7. Stress, Anxiety and Depression 8. Fatigue and Sleep 9. Human Information Processing 10. Judgement and Decision Making 11. Crew Resource Management and Communication 12. Threat and Error Management 13. First Aid and Survivability
Other information	Compulsory course in the BAv programme, cannot be taken as an elective.
190.205	**Crew Resource Management**
Delivery mode / Semester	Internal Manawatu / Semesters 1 and 2
Credit Value	15
Total Course Hours	150

HFE Content Hours	150
Co-ordinator/Tutor	Prof. Nigel Long
Cost	$883.93 (domestic), $4,045.00 (international)
Frequency of offering	Twice annually
Students last 5 years	30-40 annually
Prescription	The development of practical competencies in crew resource management, including advanced topics in aviation medicine. This course is based on the requirements of the European Civil Aviation Conference (ECAC) and the International Civil Aviation Organisation (ICAO) for professional flight crew licences.
Learning outcomes	1. Explain how Crew Resource Management (CRM) contributes to improving individual, team and organisational performance. 2. Critically evaluate the strengths and weaknesses of a variety of selected CRM topics in an aviation context utilising relevant theoretical frameworks. 3. Demonstrate detailed knowledge of relevant topics in aviation medicine. 4. Demonstrate detailed knowledge of the interaction of key CRM topics on crew behaviour. 5. Demonstrate a practical knowledge of New Zealand Civil Aviation Authority's Human Factors requirements for a Commercial Pilot Licence (CPL) and an Air Transport Pilot Licence (ATPL).
HFE Content/Topics	Crew Resource Management, Individual and Team behaviour, Organisational Performance, Aviation Medicine, Aviation Psychology.
Other information	Compulsory course in the BAv programme, cannot be taken as an elective.
198.257	**Design Studio IIa (Industrial)**
Delivery mode / Semester	Internal / Semester 2
Credit Value	30
Total Course Hours	192 (50% class contact, 50% self-directed)
HFE Content Hours	48
Co-ordinator/Tutor	Lyn Garrett
Cost	$1,691.50 (domestic)
Frequency of offering	Annual
Students last 5 years	About 45 / year
Prescription	In this studio course students will explore and articulate creative responses to design challenges through critical awareness of contextual issues. Students will develop and apply core techniques, skills and processes in industrial design.
Learning outcomes	The learning outcomes are not explicit about content – more about generic processes.
HFE Content/Topics	There are two modules in this course. The second module includes an introduction to ergonomics and affective design processes, focussing on designing for hands and handling as a case study of anthropometrics, biomechanics, semantics and affective design.
Other information	A core Industrial Design course within the Bachelor of Design (Honours).
198.258	**Design Studio IIb (Industrial)**
Delivery mode / Semester	Internal / Semester 2
Credit Value	30
Total Course Hours	192 (50% class contact, 50% self-directed)
HFE Content Hours	96
Co-ordinator/Tutor	Lyn Garrett
Cost	$1,691.50 (domestic)
Frequency of offering	Annual

Students last 5 years	About 45 / year
Prescription	In this studio course students will continue to explore and articulate creative responses to design challenges through critical inquiry into contemporary issues relevant to industrial design. Students will further develop and apply core design techniques, skills and processes.
Learning outcomes	The learning outcomes are not explicit about content – more about generic processes.
HFE Content/Topics	There are two modules in this course. The first module focusses explicitly on 'designing for people', staircasing from anthropometrics, ergonomics and task analysis, inclusive / collaborative design processes, and affective design. Students develop a user-focussed design proposal around a specific product area.
Other information	A core Industrial Design course within the Bachelor of Design (Honours).
198.453	**Industrial Design Research and Development**
Delivery mode / Semester	Internal / Semester 1
Credit Value	3o
Total Course Hours	192 (40% class contact, 60% self-directed)
HFE Content Hours	48
Co-ordinator/Tutor	Lyn Garrett
Cost	$1,691.50 (domestic)
Frequency of offering	Annual
Students last 5 years	40 / year
Prescription	Research methods, processes and practices for industrial design and their application through a research project.
Learning outcomes	The learning outcomes are not explicit about content – more about generic processes.
HFE Content/Topics	Students undertake a self-selected design project, investigating user experience in depth. Key components of understanding user experience include an ergonomics analysis, journey mapping, experience and interaction prototyping. The focus is on developing insight into user experience that can direct the design of a product.
Other information	The first of two core final year Industrial Design courses within the Bachelor of Design (Honours). This projects that students initiate in this course are completed in the Semester Two paper 198.454 Industrial Design Research Project.
198.454	**Industrial Design Research Project**
Delivery mode / Semester	Internal / Semester 2
Credit Value	45
Total Course Hours	192 (30% class contact, 70% self-directed)
HFE Content Hours	48
Co-ordinator/Tutor	Lyn Garrett
Cost	$1,691.50 (domestic)
Frequency of offering	Annual
Students last 5 years	About 40 / year
Prescription	In this studio course students will explore and articulate creative responses to design challenges through critical awareness of contextual issues. Students will develop and apply core techniques, skills and processes in industrial design.
Learning outcomes	The learning outcomes are not explicit about content – more about generic processes.
HFE Content/Topics	Students complete their self-selected design project, resolving user experience issues throughout the design and specification of a product or product system.

Other information	The second of two core final year Industrial Design paper within the Bachelor of Design (Honours). This projects that students complete in this paper was initiated in the Semester One paper 198.453 Industrial Design Research and Development.
198.463	**Digital Representation**
Delivery mode / Semester	Internal / Semester 1
Credit Value	15
Total Course Hours	48 (50% class contact, 70% self-directed)
HFE Content Hours	10
Co-ordinator/Tutor	Jason Mitchell
Cost	$845.75 (domestic)
Frequency of offering	Annual
Students last 5 years	25 / year
Prescription	Digital design processes and their integration into design research.
Learning outcomes	The learning outcomes are not explicit about content – more about generic processes.
HFE Content/Topics	The focus of the paper is in learning and applying a range of advanced CAD process to a design project. One of the digital processes is applying digital anthropmetric models to the design of a micro interior (a boat, for example).
Other information	An elective Industrial Design paper within the Bachelor of Design (Honours).
University/ Tertiary provider	**Auckland University of Technology**
School/ Faculty/College	**Clinical Sciences**
Qualifications/Programmes	**AK3483 Postgraduate Certificate in Health Science** **AK3487 Postgraduate Diploma in Health Science** **AK3485 Master of Health Science** **AK3733 Master of Health Practice**
RHAB811, Level 8	**Health Ergonomics**
Delivery mode / Semester	Small group study, problem based learning, formal presentations, practical case studies, and on-line discussion forums. There will be one block course held over 3.5 days during the semester
Credit Value	15
Total Course Hours	153 hr: 28 hrs classroom; 125 self-directed learning
HFE Content Hours	153 hr
Co-ordinator/Tutor	Professor Mark Boocock Dr Fiona Trevelyan Liz Ashby
Cost	$1,200.00 approx
Frequency of offering	Annual
Students last 5 years	76
Prescription	Provides a broad based introduction to ergonomic principles and their application in the design of work, equipment and the workplace. Explores and examines methodological approaches to ergonomics problem solving.
Learning outcomes	1. Apply ergonomic principles in work design. 2. Critically evaluate appropriate analytical methods for the assessment of ergonomic risk factors in the workplace. 3. Justify the application of suitable ergonomic methods within an occupational health context. 4. Critique findings from comprehensive ergonomic health assessment. 5. Present work at the appropriate academic standard.
HFE Content/Topics	• Aims, objectives and benefits of ergonomics • Definition and scope of ergonomics and systems of work • Measurement of human characteristics, capabilities and limitations • Body systems – anatomy, static and dynamic anthropometry and postures

	• Musculoskeletal disorders arising from manual handling and repetitive work. • Risk assessment tools to evaluate physical and psychosocial factors within the work environment • Work design and task analysis.
Other information	
RHAB801, Level 8	**Occupational Ergonomics: Concepts of Moving and Handling**
Delivery mode /Semester	Seminars, lectures and tutorials delivered on-site over two 3-day study modules. Students complete selected readings relating to the content of block modules. Online learning tasks to facilitate discussion, knowledge and understanding.
Credit Value	30
Total Course Hours	300 hr: 42 hrs classroom; 228 self-directed learning; 30 hr Online learning tasks
HFE Content Hours	300 hr
Co-ordinator/Tutor	Dr Fiona Trevelyan Professor Mark Boocock Liz Ashby
Cost	$2,250.00 approx
Frequency of offering	Annual
Students last 5 years	14
Prescription	Promotes critical synthesis and the application of current evidence and theory to healthcare and industrial settings and utilises a systematic approach to evaluate and reduce workplace risk associated with moving and handling.
Learning outcomes	1. Analyse core principles of moving and handling in health care and industrial settings. 2. Critically evaluate moving and handling practice and service delivery in the context of current evidence and government policy. 3. Assess and critique moving and handling tasks from anatomical, physiological and biomechanical perspectives. 4. Critically analyse the context and justify the application of ergonomics solutions to load handling in healthcare and industrial settings. 5. Present work at the appropriate academic standard.
HFE Content/Topics	• Legal context of moving and handling • Assessment of risk associated with moving and handling • Design of the physical environment • Evaluation and management of complex moving and handling scenarios • Interventions to reduce risk associated with moving and handling
Other information	
RHAB802, Level 8	**Vocational Management and Rehabilitation**
Delivery mode / Semester	The seminars, lectures, and tutorials are delivered on-site over two three-day study modules. Students complete selected readings relating to the content of block modules. Online learning tasks are used to facilitate discussion, knowledge and understanding.
Credit Value	30
Total Course Hours	300 hr: 42 hrs classroom; 228 self-directed learning; 30 hr Online learning tasks
HFE Content Hours	300 hr
Co-ordinator/Tutor	Dr Joanna Fadyl Dr Fiona Trevelyan Professor Mark Boocock Associate Professor Nicola Kayes
Cost	$2,250.00 approx
Frequency of offering	Annual
Students last 5 years	40

Prescription	Fosters critical synthesis and application of current evidence and theory to practice in vocational management and rehabilitation. Examines the relationship between work and health at individual and societal levels.
Learning outcomes	1. Analyse core principles of vocational management and rehabilitation. 2. Appraise the evidence for vocational management and rehabilitation concepts and approaches to practice. 3. Critically evaluate practice and service delivery in the context of current evidence and government policy. 4. Synthesise and apply current relevant evidence and theory to practice in vocational management and rehabilitation. 5. Present work at the appropriate academic standard.
HFE Content/Topics	• Work and Health • Principles and practice of ergonomic analysis • Core concepts in Vocational management and rehabilitation • Prevention of Work disability • Assessment of Work disability / ability / instability • Interventions to promote sustainable return to work
Other information	

Notes:
AUT in 2018 will commence offering a Graduate Diploma in Business in Occupational Health and Safety, through the Centre for Occupational Health and Safety Research. Contact Dr Felicity Lamm for more information.

AUT is also working to offer (for late 2018 possibly) a new undergraduate offering in Construction Engineering, with a major in Occupational Health and Safety. This is still being written. Papers are likely to include: Human factors engineering, level 6, 15 credits; Resilience engineering, Level 6, 15 credits; and Safety Engineering, Level 7, 15 credits. Contact Dr Dave Moore for more information.

AUT also has some papers within the Information Technology and Computer Science offerings of some relevance to HFE. These are COMP822 Human Computer Interaction (15 credits, Semester 1,); and INFS811 Usage Centred Design (15 credits, Semester 2).

University/ Tertiary provider	**University of Canterbury**
School/ Faculty/College	**Department of Psychology**
Qualifications/Programmes	**Psyc451 is offered as Masters paper within the general programme. It can be taken as a paper within the Masters in Applied psychology.**
Psyc451	**Human factors - Ergonomics**
Delivery mode / Semester	2nd Semester course
Credit Value	15 points, .1250 efts
Total Course Hours	24
HFE Content Hours	24
Co-ordinator/Tutor	Not known. This course was taught by Deak Helton who resigned in 2016. It is staffed by a mixture of PhD students.
Cost	Domestic $963
Frequency of offering	Offered this year – but may not be offered again as the University is unlikely to recruit a staff member in the HF area.
Students last 5 years	Approximate 15 per year
Prescription	http://www.canterbury.ac.nz/courseinfo/GetCourseDetails.aspx?course=PSYC451&occurrence=17S2(C)&year=2017

Learning outcomes	Not currently available
HFE Content/Topics	Not currently available
Other information	Information about this course for 2017 is not currently available as the students teaching it this year have not developed a course outline. The link above is the general course information held on the University web site. It is very unlikely that this course or any course in HF will be offered past 2017.
University/ Tertiary provider	**University of Otago**
School/ Faculty/College	**Dunedin School of Medicine** **Department of Psychology** **School of Physiotherapy**
Qualifications/Programmes	**PGCert/Dip/Masters Health Science** **BA/BSc, MA/Msc, PhD** **MHealSc, PGDipSEM, PGDipPhty, MPhty, PGDipHealSc**
OCCH401	**Occupational Health**
Delivery mode / Semester	Distance
Credit Value	30
Total Course Hours	150
HFE Content Hours	30
Co-ordinator/Tutor	Dave McBride
Cost	Domestic $2,692.75, International $9,125
Frequency of offering	Annual
Students last 5 years	10-15
Prescription	Strategic management of health and safety risks in the workplace requires the systematic and analytical framework taught in this course. Students learn to recognize chemical, physical, biological, ergonomic and psychosocial hazards, and, using the bio-psychosocial model, develop evidence based strategies to manage and control health and safety risks.
Learning outcomes	The graduate will have developed 'hands on' skills in the systematic evaluation of occupational health hazards and will be able to formulate a workplace specific health and safety management plan
HFE Content/Topics	Ergonomics and human factors, the biopsychosocial model in health and safety practice: safe person, safe work, safe systems, the role of ergonomics in prevention of MSDs, rehabilitation.
Other information	Two additional papers from Diploma, one 'substitute ' paper from another institution
OCCH402	**Occupational Safety**
Delivery mode / Semester	Distance
Credit Value	30
Total Course Hours	300
HFE Content Hours	30
Co-ordinator/Tutor	Dave McBride
Cost	Domestic $2,692.75, International $9,125
Frequency of offering	Annual
Students last 5 years	10-15
Prescription	This paper builds upon the knowledge and skills gained in OCCH401 by in depth development of critical analysis and workplace health and safety. The successful candidate will identify 'best practice' in the management of workplace risks to health and safety, and formulate a strategy to implement a management plan.
Learning outcomes	Learning Outcomes: Students who successfully complete the paper will be taught

	best practice in hazard recognition and get team-based, hands-on practice in evaluating the occupational environment. Graduates will be able to develop and operationalise a strategy to manage health and safety in the workplace so as to meet, and exceed, the requirements of the Health and Safety at Work Act.
HFE Content/Topics	Systematic and 'in depth' analysis of human factors and ergonomics. Fatigue. Shift work. Physical hazards.
Other information	
PSYC326	**Cognitive Engineering**
Delivery mode / Semester	On campus, Semester 2
Credit Value	18 points
Total Course Hours	180 hours
HFE Content Hours	180 hours
Co-ordinator/Tutor	Dr Vanessa Beanland (Ex David O'Hare)
Cost	$1,018.05
Frequency of offering	Semester 2 each year
Students last 5 years	100-130
Prescription	The study of factors that affect decision making and cognition in naturalistic task settings. Cognitive engineering is a recently developed field of study concerned with human performance in technological settings. These include transportation (road, rail, air and sea), manufacturing and healthcare. The paper provides an introduction to the topic and preparation for further study in the area.
Learning outcomes	• Develop knowledge of theories of human error and systemic failure and the ability to apply these to real-world incidents and accidents. • Develop knowledge of human attention and apply this to problems of display design, skill development, automation and workload. • Develop knowledge of theories of decision making and their application in medicine and health care. • Demonstrate critical thinking about accident causation and failures involving human performance.
HFE Content/Topics	Human error, display design, attention and performance, automation, fatigue, risk perception, decision making
Other information	
PSYC212	**Social and Applied Psychology**
Delivery mode (eg Internal/Distance)/ Semester	Internal on-campus /Semester 1
Credit Value	18 points
Total Course Hours	180
HFE Content Hours	90
Co-ordinator/Tutor	Prof Jamin Halberstadt
Cost	Domestic $1,018.05, international $4,320
Frequency of offering	Semester 1 each year
Students last 5 years	280-320
Prescription	Social psychology, decision making, applied psychology, and human factors. This paper examines theories and research in social psychology - the study of how people influence and are influenced by others - and covers a variety of real-world practical problems that have stimulated research in psychology. We will give attention to both classic and contemporary theories about these problems and take a critical approach to the research used to test them.
Learning outcomes	This paper includes components on social psychology and applied psychology. Social psychology topics include: Causal attribution, Attitudes and attitude change, Prejudice, Aggression, Altruism, Emotion, Self-perception, Group behaviour, Applied social psychology. Applied topics include: Communication failures in aviation, The

	design of technological devices, Motor vehicle crashes, Varieties of human error, Stress and performance, Personnel selection, Behaviour in emergencies, Decisions under uncertainty. Students will gain a basic background in social and applied psychology and learn to use the scientific method to test hypotheses in these areas.
HFE Content/Topics	Ergonomics in design, flight deck performance, human error, stress, automation, decision making
Other information	
SPME710	**Sports Ergonomics**
Delivery mode / Semester	Distance – delivered by webconference if minimum class number reached.
Credit Value	30
Total Course Hours	?
HFE Content Hours	?
Co-ordinator/Tutor	Dr Daniel Cury Ribiero, School of Physiotherapy
Cost	Domestic $2,692.75, International $6250
Frequency of offering	Annual?, Not offered in 2017
Students last 5 years	?
Prescription	The interaction between the sports person and their environment, specifically its effect on injury mechanisms and injury prevention including interaction with other participants, the surface on which the sport is performed, and equipment used. This paper, run by the School of Physiotherapy, is based on comprehensive reviews and readings of the literature. It allows students to gain a new level of understanding in an area of particular interest to them. For example, some students have a particular interest in the ground surface on which a particular sport is played and in the interaction between the surface, shoes and injury. The paper gives them the skills to read widely across the chosen topics (guided by the lecture series and readings) and develop three assignments, each building on the previous. As a result, by the end of the paper the student has a comprehensive understanding of this chosen topic and an ability to translate the skills learnt in this process to other questions they may have.
Learning outcomes	Sport and Exercise Medicine describes the health care of active people, including high-performing athletes. The University of Otago has a unique Postgraduate Diploma course available to suitably qualified graduates from Medicine, Physiotherapy, Pharmacy, Physical Education, Podiatry, Nutrition and other related health science subjects. A doctor who chooses to specialise in Sports Medicine must complete additional advanced training for Fellowship of the Australasian College of Sports Physicians (FACSP). A physiotherapist who wishes to specialise in the rehabilitation of athletes completes postgraduate study in the management of sports injuries. Similarly, sport science graduates follow their specific area of expertise in psychology, nutrition or exercise science. There is an increasing demand for sport psychologists, nutritionists, and strength and conditioning experts who work with professional sports teams. Team doctors and physiotherapists accompany our national teams to world championships, Commonwealth and Olympic Games.
HFE Content/Topics	
Other information	
University/ Tertiary provider	**University of Canterbury**
School/ Faculty/College	**Department of Psychology**
Qualifications/Programmes	**Psyc451 is offered as Masters paper within the general programme. It can be taken as a paper within the Masters in Applied psychology.**
Psyc451	**Human factors - Ergonomics**
Delivery mode / Semester	2nd Semester course

Credit Value	15 points, .1250 efts
Total Course Hours	24
HFE Content Hours	24
Co-ordinator/Tutor	Not known. This course was taught by Deak Helton who resigned in 2016. It is staffed by a mixture of PhD students.
Cost	Domestic $963
Frequency of offering	Offered this year – but may not be offered again as the University is unlikely to recruit a staff member in the HF area.
Students last 5 years	Approximate 15 per year
Prescription	http://www.canterbury.ac.nz/courseinfo/GetCourseDetails.aspx?course=PSYC451&occurrence=17S2(C)&year=2017
Learning outcomes	Not currently available
HFE Content/Topics	Not currently available
Other information	Information about this course for 2017 is not currently available as the students teaching it this year have not developed a course outline. The link above is the general course information held on the University web site. It is very unlikely that this course or any course in HF will be offered past 2017.
University/ Tertiary provider	**University of Auckland**
School/ Faculty/College	**Faculty of Medical and Health Sciences**
Qualifications/Programmes	**Part of Master of Health Leadership**
MED700	**Designing Safer Systems**
Delivery mode / Semester	Delivered in 4 x full-day workshops, Grafton Campus, Semester 2 each year
Credit Value	15 points
Total Course Hours	150
HFE Content Hours	120
Co-ordinator/Tutor	Dr Craig Webster
Cost	
Frequency of offering	Once per year
Students last 5 years	8 – new course, 2017 is only the second time course has been offered
Prescription	This course incorporates theoretical and applied elements in human psychology, human factors, systems engineering and redesign, failure analysis and prevention, teamwork and communication, organisational culture, and quality monitoring and hazard mitigation.
Learning outcomes	In this course you will study health care systems, gain a better understanding of their complexity, how and why they sometimes go wrong, and what has been successful so far in improving care, reducing harm and controlling costs. You will learn methods for identifying causes of harm, approaches for redesigning aspects of systems, and analytical techniques for monitoring and detecting improvements in safety.
HFE Content/Topics	Nature of human error, safe system design, fault detection techniques, improvement monitoring, complex systems analysis, teamwork and communication, effective hazard mitigation
Other information	Typical pre-requisites are POPLHLTH 724, NURSING 775
MED 702	**Understanding Complex Clinical Systems**
Delivery mode / Semester	Flexible delivery, combining online learning and videoconferencing. Semester 2. Assessment involves three assignments and a final exam. Grafton Campus.
Credit Value	15 point course intended for professionals working in healthcare management or clinical practice.

Total Course Hours	
HFE Content Hours	
Co-ordinator/Tutor	Dr Cathy Stinear
Cost	
Frequency of offering	
Students last 5 years	
Prescription	This course draws across domains of system science, safety science, complexity theory, and implementation science to explore how leaders understand and effect change in healthcare. A particular focus is on understanding how to bring about improvements in health care quality and safety in the context of organisational culture, power, and politics. You will learn about the complex and dynamic characteristics of healthcare systems, and how to provide effective leadership in times of change and crisis. The Quality and Safety of health care around the world has become of increasing concern in recent years, in light of spiralling health care costs and a greater knowledge of the extent of harm to patients undergoing treatment. This area of inquiry attempts to better understand and manage the complexities of delivering safe and high quality care in a wide range of health care systems and environments.
Learning outcomes	In this course you will develop an understanding of complexity, and the management of complex systems, from a healthcare perspective. You will learn about implementation science and evaluating the evidence base for new techniques and technology in health care. You will also develop skills in leading change in health care settings.
HFE Content/Topics	System science, safety science, complexity theory, organisational culture
Other information	Typical pre-requisites are POPLHLTH 724, NURSING 775