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23 February 2023

s 9(2)(a)

Email: s 9(2)(a)
Ref: H2023019425

Tēnā koe s 9(2)(a)

Response to your request for official information

Thank you for your request under the Official Information Act 1982 (the Act) to Manatū Hauora (the Ministry of Health) on 19 January 2023 for:

> *"A copy (or copies) of documentation that the Director General relied upon when they made their decision to grant equivalency under the Environmental Health Officers Qualifications Regulations 1993 to the three University of Canterbury qualifications listed below, and on MoH's website here, and Information about the exact date when that change came into force?*
> *The three qualifications are:*
> - *Master of Health Sciences Professional Practice (Environment and Health), University of Canterbury*
> - *Master of Health Sciences (Environment and Health), University of Canterbury*
> - *Postgraduate Diploma in Health Sciences (Environment and Health), University of Canterbury"*

A memo to the Director-General of Health entitled, *'Environmental Health Officers Qualifications Regulations 1993'* has been identified within scope of your request. A copy of this is appended to this letter and is being released to you in full. Please note, the date the change came into force is the date the Director-General of Health signed the memo on 19 August 2022.

I trust this information fulfils your request. Under section 28(3) of the Act, you have the right to ask the Ombudsman to review any decisions made under this request. The Ombudsman may be contacted by email at: info@ombudsman.parliament.nz or by calling 0800 802 602.

Please note that this response, with your personal details removed, may be published on the Manatū Hauora website at: www.health.govt.nz/about-ministry/information-releases/responses-official-information-act-requests.

Nāku noa, nā

Ross Bell
Acting Deputy Director-General
Deputy Director-General
Public Health Agency | Te Pou Hauora Tūmatanui

MANATŪ HAUORA
MINISTRY OF HEALTH

Memo

Environmental Health Officers Qualifications Regulations 1993: recognition of qualifications

18.

Date:	2 August 2022
To:	Dr Diana Sarfati, Director-General of Health,
From:	Sally Gilbert, Manager, Public Health Strategy
For your:	Decision

Purpose of report

1. This memo recommends that you recognise three New Zealand qualifications as equivalent to the National Diploma in Environmental Science.

Background

2. Environmental Health Officers are employed by local city or district councils to administer local bylaws and legislation that is devolved to local councils, generally limited to activities and public health risks likely to occur within city or district boundaries. Environmental Health Officers will investigate, monitor, assess and advise on statutory nuisances, food and alcohol safety, disease prevention, food-borne illnesses, insanitary homes and environmental hazards such as pollution.

3. The Environmental Health Officers Qualifications Regulations 1993 (the Regulations) state that no person shall be appointed as an Environmental Health Officer unless they are qualified, ie hold the National Diploma in Environmental Science or a qualification accepted by the Director-General of Health as at least equivalent to it. The list of New Zealand and overseas qualifications accepted as being qualifications equivalent to the National Diploma in Environmental Health Science are available on the Ministry's website.

Application from University of Canterbury to Recognise Qualifications

4. Dr Arindam Basu (Endorsement Coordinator, Environmental Health) and Dr Sarah Lovell (Acting Academic Dean) have asked Ministry of Health officials to consider whether three qualifications issued by the University of Canterbury can be accepted as equivalent to the National Diploma in Environmental Science: the Postgraduate Diploma in Health Sciences (Environment and Health), Master of Health Sciences Professional Practice (Environment and Health), and Master of Health Sciences (Environment and Health).

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5. Sally Giles (Principal Advisor) and I have assessed the qualifications for equivalence with the former National Diploma in Environmental Science. We reviewed the course programmes to consider whether they are comparable to (or of a higher standard than) Massey University's Graduate Diploma in Environmental Health, which is already accepted as equivalent to the National Diploma in Environmental Science (see Appendix1).
6. Given the above circumstances, it is recommended that you recognise the Postgraduate Diploma in Health Sciences (Environment and Health), Master of Health Sciences Professional Practice (Environment and Health), and Master of Health Sciences (Environment and Health), issued by the University of Canterbury as being at least equivalent to the National Diploma in Environmental Health Science.

Recommendations

It is recommended that you:

1.	note	that you have authority to accept a qualification as equivalent to the National Diploma in Environmental Health Science;	✓
2.	note	that applications have been received to recognise three qualifications as at least equivalent to the National Diploma in Environmental Science;	✓
3.	accept	the Postgraduate Diploma in Health Sciences (Environment and Health) from the University of Canterbury as being at least equivalent to the National Diploma in Environmental Health Science, as required by the Regulations;	Yes/No
4.	accept	the Master of Health Sciences Professional Practice (Environment and Health) from the University of Canterbury as being at least equivalent to the National Diploma in Environmental Health Science, as required by the Regulations;	Yes/No
5.	accept	the Master of Health Sciences (Environment and Health) from the University of Canterbury as being at least equivalent to the National Diploma in Environmental Health Science, as required by the Regulations;	Yes/No
7.	agree	that officials place the revised list of recognised qualifications (Appendix 2) on the Ministry's website.	Yes/No

Signature _____ Date: 19 August 2022

Dr Diana Sarfati
Te Tumu Whakarae mō te Hauora
Director-General of Health

Appendix 1: Assessment of Qualifications from the University of Canterbury

Assessment of Postgraduate Diploma in Health Sciences (Environment and Health) from the University of Canterbury

Bachelor of Health Sciences (Environmental Health), Massey University	**Postgraduate Diploma in Health Sciences (Environment and Health)**	**Learning Outcomes**
Entry requirements: relevant degree in applied science, health science, nursing, science or technology.		Entry requirements: • relevant degree in applied science, health science, nursing, science or technology OR • degree relevant to health sciences and the proposed programme of study OR • an appropriate health or allied professional qualification requiring at least three years full-time tertiary study OR • successfully completed a qualifying course OR • evidence of ability for advanced level academic study OR • Academic Equivalent Standing
Chemistry, toxic substances, human health and the environment	HLTH 403 Environmental Health ENVR404 Environmental Toxicology	• Critically appraise a range of literature on environmental conditions as a source of illness and burden of disease (HLTH403) • Topics addressed will include toxicokinetics (pathways of entry and action of the toxins), Toxicodynamics (what the body does to the toxin, metabolism and excretion of the toxins (HLTH403) • Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404)

		• Derive toxicology dose indicators (e.g. LOAEL, NOEC) (ENVR404) • Critically Evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404) • Derive environmental quality criteria from toxicity data (ENVR404)
Food safety and human health	HLTH 403 Environmental Health	• Demonstrate mastery of their knowledge and skills to investigate and address health problems that have origins in the physical, chemical and social environments (HLTH403) • Demonstrate understanding of New Zealand Food Safety and Codex Alimentarius (HLTH403) • Demonstrate understanding of larger community based issues related to Environmental sources of illness (HLTH403) • • Topics addressed will include different types of foodborne toxins, how to investigate foodborne disease outbreaks (HLTH403)
Environmental and public health law	ENVR404 Environmental Toxicology GEOG404 Resources and Environmental Management in New Zealand	• Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404)

	HLTH403 Environmental Health HLTH463 Whanau and Community Health	• Understand New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment (GEOG404) • Identify resource management issues, and the information requirements and steps to develop policies and plans to address those issues (GEOG404) • Understand the role expert evidence in a hearing and prepare expert evidence to a satisfactory level on basic issues (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues. Topics include environmental law and management framework in NZ, introducing the RMA, Consents and planning documents, working together on evidence, hearings and submissions (GEOG404) • Design studies to address environmental health related problems environments. Topics include managing personal information and privacy, understanding health legislation, the collection of evidence (HLTH403)
Water and waste treatment	ENVR404 Environmental Toxicology HLTH 403 Environmental Health GEOG404 Environmental and Resource Management	• Critically evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404)

		• Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Derive environmental quality criteria from toxicity data (ENVR404) • Undertake a field visit to Christchurch Bromley Wastewater treatment plant (HLTH403) • Discuss wastewater treatment and in water sanitation and hygiene (HLTH403) • Understand New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics include ecological impact assessment and field trip to a farm (GEOG404)
Biophysical effects of noise and vibration	HLTH 403 Environmental Health	• Assess exposure to ambient noise (hands on with sound level meter and noise dosimetry) (HLTH403) • Learn how to critically appraise epidemiological evidence on health effects of noise (HLTH403) • Learn mechanism of noise induced health effects (HLTH403) • • Learn principles of noise regulation and health risk assessment of noise and sound in environment and workplaces (HLTH403)
Environmental Monitoring and Investigative Methods	HLTH403 Environmental Health ENVR404 Environmental Toxicology ENVR415 Assessing and Communicating Environmental Effects and Risks GISC422 Foundations of Geographic	• Demonstrate mastery of knowledge and skills to investigate and address health problems that have origins in the physical, chemical and social environments (HLTH403) • Design studies to address environmental health related problems (HLTH403)

	Information Systems and Science	• Evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • •Demonstrate the ability to apply basic spatial analysis techniques to geographic data (GISC422) • Demonstrate practical use of GIS and RS software to access and use digital geographic data (GISC422) • Produce digital map compositions which demonstrate sound cartographic principles; and undertake basic fieldwork for geographic data collection (GISC422) • Compare frameworks and methodologies to assess environmental effects and risks (ENVR415) • Undertake an assessment of environmental effects in accordance with Aotearoa New Zealand regulations (ENVR415) • Describe how environmental effects relate to cultural risks (ENVR415) • Effectively communicate the outcomes of risk assessment to diverse audiences (ENVR415) • • Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415)
Environmental health risk management for disasters	HLTH 403 Environmental Health ENVR 404 Environmental Toxicology GEOG 404 Resources and	• Demonstrate understanding of the larger community based issues related to environmental sources of illness (HLTH403)

	Environmental Management in New Zealand	• Topics addressed include six steps of EHRA or HHRA; hazard identification; exposure assessment; risk characterisation; risk communication; risk mitigation (HLTH403) • Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics covered include (i) Climate change adaptation, planning for resilience to weather-related disasters in a changing climate; (ii) Disaster resilience (GEOG404)
Microbiology, Epidemiology and Communicable Diseases	HLTH403 Environmental Health HLTH460 Epidemiology and Critical Appraisal	• Compare potential exposure and uptake pathways for a range of environmental contaminants (HLTH403) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (HLTH403) • Topics include: understanding cause and effect in epidemiology relevant to environmental health; epidemiological measurements relevant for environmental health; epidemiological study designs relevant to environmental health, epidemic investigations (HLTH403)

		• Topics include: Epidemiological study designs, investigation of outbreaks, analysis of epidemiological data, critical appraisal of literature (HLTH460)
	HLTH403 Environmental Health ENVR415 Concepts and Principles of Environmental Science GEOG404 Resources and Environmental Management HLTH463 Whanau and Community Health	Matauranga Māori • Environmental sources of illness (HLTH403) • Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues (GEOG404)

Conclusion: the Postgraduate Diploma in Health Sciences (Environment and Health) from the University of Canterbury is comparable to the National Diploma. In addition, the University of Canterbury offers a further, ninth category Mātauranga Māori which captures indigenous knowledge and bicultural skills that they consider important to the work of Environmental Health and Health Protection Officers. The University of Canterbury is committed to strengthening the bicultural competence of its graduates and believe this category reflects the valuing of indigenous knowledge that is embedded in emerging legislation such as the Pae Ora (Healthy Futures) Act 2022, the Water Services Entities Bill, and the three Acts proposed to replace the RMA.

Assessment of Master of Health Sciences Professional Practice (Environment and Health) from the University of Canterbury

Bachelor of Health Sciences (Environmental Health), Massey University	Master of Health Sciences Professional Practice (Environment and Health)	Learning Outcomes
Entry requirements: relevant degree in applied science, health science, nursing, science or technology.		Entry requirements: • degree relevant to health sciences and the proposed programme of study OR • an appropriate health or allied professional qualification requiring at least three years full-time tertiary study OR • successfully completed a qualifying course OR • evidence of ability for advanced level academic study OR • Academic Equivalent Standing
Chemistry, toxic substances, human health and the environment	HLTH 403 Environmental Health ENVR404 Environmental Toxicology	• Critically appraise a range of literature on environmental conditions as a source of illness and burden of disease (HLTH403) • Topics addressed will include toxicokinetics (pathways of entry and action of the toxins), Toxicodynamics (what the body does to the toxin, metabolism and excretion of the toxins (HLTH403) • Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404) • Derive toxicology dose indicators (e.g. LOAEL, NOEC) (ENVR404)

		• Critically Evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404) Derive environmental quality criteria from toxicity data (ENVR404)
Food safety and human health	HLTH 403 Environmental Health	• Demonstrate mastery of their knowledge and skills to investigate and address health problems that have origins in the physical, chemical and social environments (HLTH403) • Demonstrate understanding of New Zealand Food Safety and Codex Alimentarius (HLTH403) • Demonstrate understanding of larger community based issues related to Environmental sources of illness (HLTH403) • Topics addressed will include different types of foodborne toxins, how to investigate foodborne disease outbreaks (HLTH403)
Environmental and public health law	ENVR404 Environmental Toxicology GEOG404 Resources and Environmental Management in New Zealand HLTH403 Environmental Health HLTH463 Whanau and Community Health	• Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404) • Understand New Zealand's environmental and resource management framework including management of land,

		freshwater, natural hazards and the coastal environment (GEOG404) • Identify resource management issues, and the information requirements and steps to develop policies and plans to address those issues (GEOG404) • Understand the role expert evidence in a hearing and prepare expert evidence to a satisfactory level on basic issues (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues. Topics include environmental law and management framework in NZ, introducing the RMA, Consents and planning documents, working together on evidence, hearings and submissions (GEOG404) • Design studies to address environmental health related problems environments. Topics include managing personal information and privacy, understanding health legislation, the collection of evidence (HLTH403) • Identify legal and ethical issues in research (including the application of cultural safeguards) related to exploring a health care topic in the community (HLTH463)
Water and waste treatment	ENVR404 Environmental Toxicology HLTH 403 Environmental Health GEOG404 Environmental and Resource Management	• Critically evaluate methods used to test the toxicity of contaminants (ENVR404)

		• Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Derive environmental quality criteria from toxicity data (ENVR404) • Undertake a field visit to Christchurch Bromley Wastewater treatment plant (HLTH403) • Discuss wastewater treatment and in water sanitation and hygiene (HLTH403) • Understand New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics include ecological impact assessment and field trip to a farm (GEOG404)
Biophysical effects of noise and vibration	HLTH 403 Environmental Health	• Assess exposure to ambient noise (hands on with sound level meter and noise dosimetry) (HLTH403) • Learn how to critically appraise epidemiological evidence on health effects of noise (HLTH403) • Learn mechanism of noise induced health effects (HLTH403) • Learn principles of noise regulation and health risk assessment of noise and sound in environment and workplaces (HLTH403)
Environmental Monitoring and Investigative Methods	HLTH403 Environmental Health ENVR404 Environmental Toxicology	• Demonstrate mastery of knowledge and skills to investigate and address health problems that have origins in the physical, chemical and social environments (HLTH403)

	ENVR415 Assessing and Communicating Environmental Effects and Risks GISC422 Foundations of Geographic Information Systems and Science	• Design studies to address environmental health related problems (HLTH403) • Evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • •Demonstrate the ability to apply basic spatial analysis techniques to geographic data (GISC422) • Demonstrate practical use of GIS and RS software to access and use digital geographic data (GISC422) • Produce digital map compositions which demonstrate sound cartographic principles; and undertake basic fieldwork for geographic data collection (GISC422) • Compare frameworks and methodologies to assess environmental effects and risks (ENVR415) • Undertake an assessment of environmental effects in accordance with Aotearoa New Zealand regulations (ENVR415) • Describe how environmental effects relate to cultural risks (ENVR415) • Effectively communicate the outcomes of risk assessment to diverse audiences (ENVR415) • Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415)

Environmental health risk management for disasters	HLTH 403 Environmental Health ENVR 404 Environmental Toxicology GEOG 404 Resources and Environmental Management in New Zealand	• Demonstrate understanding of the larger community based issues related to environmental sources of illness (HLTH403) • Topics addressed include six steps of EHRA or HHRA; hazard identification; exposure assessment; risk characterisation; risk communication; risk mitigation (HLTH403) • Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics covered include (i) Climate change adaptation, planning for resilience to weather-related disasters in a changing climate; (ii) Disaster resilience (GEOG404)
Microbiology, Epidemiology and Communicable Diseases	HLTH403 Environmental Health HLTH460 Epidemiology and Critical Appraisal	• Compare potential exposure and uptake pathways for a range of environmental contaminants (HLTH403) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (HLTH403) • Topics include: understanding cause and effect in epidemiology relevant to environmental health; epidemiological measurements relevant for environmental health; epidemiological study designs relevant to environmental health, epidemic investigations (HLTH403)

		• Topics include: Epidemiological study designs, investigation of outbreaks, analysis of epidemiological data, critical appraisal of literature (HLTH460)
	HLTH403 Environmental Health ENVR415 Concepts and Principles of Environmental Science GEOG404 Resources and Environmental Management HLTH463 Whanau and Community Health	Matauranga Māori • Environmental sources of illness (HLTH403) • Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues (GEOG404)

Conclusion: the Master of Health Sciences Professional Practice (Environment and Health) from the University of Canterbury is comparable to the National Diploma. In addition, the University of Canterbury offers a further, ninth category Mātauranga Māori which captures indigenous knowledge and bicultural skills that they consider important to the work of Environmental Health and Health Protection Officers. The University of Canterbury is committed to strengthening the bicultural competence of its graduates and believe this category reflects the valuing of indigenous knowledge that is embedded in emerging legislation such as the Pae Ora (Healthy Futures) Act 2022, the Water Services Entities Bill, and the three Acts proposed to replace the RMA.

Assessment of Master of Health Sciences (Environment and Health) from the University of Canterbury

Bachelor of Health Sciences (Environmental Health), Massey University	Master of Health Sciences (Environment and Health)	Learning Outcomes
Entry requirements: relevant degree in applied science, health science, nursing, science or technology.		Entry requirements: • degree relevant to health sciences and the proposed programme of study OR • an appropriate health or allied professional qualification requiring at least three years full-time tertiary study OR • successfully completed a qualifying course OR • evidence of ability for advanced level academic study OR • Academic Equivalent Standing
Chemistry, toxic substances, human health and the environment	HLTH 403 Environmental Health ENVR404 Environmental Toxicology	• Critically appraise a range of literature on environmental conditions as a source of illness and burden of disease (HLTH403) • Topics addressed will include toxicokinetics (pathways of entry and action of the toxins), Toxicodynamics (what the body does to the toxin, metabolism and excretion of the toxins (HLTH403) • Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404) • Derive toxicology dose indicators (e.g. LOAEL, NOEC) (ENVR404) • Critically Evaluate methods used to test the toxicity of contaminants (ENVR404)

		• Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404) Derive environmental quality criteria from toxicity data (ENVR404)
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Environmental and public health law	ENVR404 Environmental Toxicology GEOG404 Resources and Environmental Management in New Zealand HLTH403 Environmental Health	• Select appropriate species and toxicological endpoints that include the consideration of legal complexities and cultural values (ENVR404) • Understand New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment (GEOG404)

		• Identify resource management issues, and the information requirements and steps to develop policies and plans to address those issues (GEOG404) • Understand the role expert evidence in a hearing and prepare expert evidence to a satisfactory level on basic issues (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues. Topics include environmental law and management framework in NZ, introducing the RMA, Consents and planning documents, working together on evidence, hearings and submissions (GEOG404) • Design studies to address environmental health related problems environments. Topics include managing personal information and privacy, understanding health legislation, the collection of evidence (HLTH403)
Water and waste treatment	ENVR404 Environmental Toxicology HLTH 403 Environmental Health GEOG404 Environmental and Resource Management	• Critically evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404) • Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • Derive environmental quality criteria from toxicity data (ENVR404)

		• Undertake a field visit to Christchurch Bromley Wastewater treatment plant (HLTH403) • Discuss wastewater treatment and in water sanitation and hygiene (HLTH403) • Understand New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics include ecological impact assessment and field trip to a farm (GEOG404)
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Environmental Monitoring and Investigative Methods	HLTH403 Environmental Health ENVR404 Environmental Toxicology ENVR415 Assessing and Communicating Environmental Effects and Risks GISC422 Foundations of Geographic Information Systems and Science	• Demonstrate mastery of knowledge and skills to investigate and address health problems that have origins in the physical, chemical and social environments (HLTH403) • Design studies to address environmental health related problems (HLTH403) • Evaluate methods used to test the toxicity of contaminants (ENVR404) • Critically evaluate and report the results of toxicity testing (ENVR404)

		• Describe how toxicity data are used to derive environmental quality criteria (ENVR404) • •Demonstrate the ability to apply basic spatial analysis techniques to geographic data (GISC422) • Demonstrate practical use of GIS and RS software to access and use digital geographic data (GISC422) • Produce digital map compositions which demonstrate sound cartographic principles; and undertake basic fieldwork for geographic data collection (GISC422) • Compare frameworks and methodologies to assess environmental effects and risks (ENVR415) • Undertake an assessment of environmental effects in accordance with Aotearoa New Zealand regulations (ENVR415) • Describe how environmental effects relate to cultural risks (ENVR415) • Effectively communicate the outcomes of risk assessment to diverse audiences (ENVR415) • Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415)
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		• Compare potential exposure and uptake pathways for a range of environmental contaminants (ENVR404) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (ENVR404) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment. Topics covered include (i) Climate change adaptation, planning for resilience to weather-related disasters in a changing climate; (ii) Disaster resilience (GEOG404)
Microbiology, Epidemiology and Communicable Diseases	HLTH403 Environmental Health HLTH460 Epidemiology and Critical Appraisal	• Compare potential exposure and uptake pathways for a range of environmental contaminants (HLTH403) • Distinguish between mechanisms of action and ecological effects for representative toxic chemicals from the cellular to ecosystem levels (HLTH403) • Topics include: understanding cause and effect in epidemiology relevant to environmental health; epidemiological measurements relevant for environmental health; epidemiological study designs relevant to environmental health, epidemic investigations (HLTH403) • Topics include: Epidemiological study designs, investigation of outbreaks, analysis of epidemiological data, critical appraisal of literature (HLTH460)
	HLTH403 Environmental Health	Matauranga Māori • Environmental sources of illness (HLTH403)

	ENVR415 Concepts and Principles of Environmental Science GEOG404 Resources and Environmental Management	• Demonstrate an understanding of Māori and Indigenous frameworks and methodologies to assess environmental effects and risks (ENVR415) • Students gain an understanding of New Zealand's environmental and resource management framework including management of land, freshwater, natural hazards and the coastal environment (GEOG404) • Recognise that environmental management systems operate within a series of political and economic constraints which limit the nature of approaches and options considered; and appreciate the existence of alternative perspectives to understanding and responding to environmental issues (GEOG404)

Conclusion: the Master of Health Sciences (Environment and Health) from the University of Canterbury is comparable to the National Diploma. In addition, the University of Canterbury offers a further, ninth category Mātauranga Māori which captures indigenous knowledge and bicultural skills that they consider important to the work of Environmental Health and Health Protection Officers. The University of Canterbury is committed to strengthening the bicultural competence of its graduates and believe this category reflects the valuing of indigenous knowledge that is embedded in emerging legislation such as the Pae Ora (Healthy Futures) Act 2022, the Water Services Entities Bill, and the three Acts proposed to replace the RMA.

Appendix 2: NEW ZEALAND Qualifications Accepted As Equivalent to the National Diploma in Environmental Health Science

- Bachelor of Applied Science (Environmental Health), Wellington Polytechnic (1995 to 2002)
- Bachelor of Applied Science, Auckland University of Technology (for graduates entering the programme after 2004)
- Bachelor of Applied Science, Auckland University of Technology, together with the Postgraduate Certificate in Public Health, Environmental Health Specialisation, Auckland University (for graduates entering the programme after 2002)
- Bachelor of Health Sciences together with the Post-graduate Diploma in Public Health, University of Auckland
- Bachelor of Health Science (Environmental Health), Massey University
- Bachelor of Health Science (Environmental Risk Management), Massey University
- Bachelor of Health Science (Human Health and Environment), Massey University (from 2009 onwards)
- Bachelor of Science (majoring in Health Protection), Auckland University of Technology (for graduates entering the programme from 2012)
- Graduate Diploma in Environmental Health, Massey University (from 2004 onwards)
- Graduate Diploma in Environmental Health Science, Massey University
- Master of Health Sciences Professional Practice (Environment and Health), University of Canterbury
- Master of Health Sciences (Environment and Health), University of Canterbury
- Postgraduate Diploma in Health Sciences (Environment and Health), University of Canterbury
- Royal Society of Health Diploma in Public Health Inspection

Overseas Qualifications Accepted As Equivalent to the National Diploma in Environmental Health Science

Australian Qualifications

- Diploma in Applied Chemistry (Environmental Health), Swinburne Institute of Technology, Melbourne (1979-1989)
- Bachelor of Applied Science (Environmental Health), Queensland University of Technology, Brisbane
- Bachelor of Applied Science (Environmental Health), University of Western Sydney, Hawkesbury
- Bachelor of Applied Science (Environmental Health), Swinburne University of Technology, Melbourne
- Bachelor of Applied Science (Environmental Health), Flinders University of South Australia, Adelaide
- Bachelor of Applied Science (Environmental Health), Curtin University of Technology, Perth
- Graduate Diploma of Environmental Health Practice, Flinders University of South Australia, Adelaide

Fijian Qualifications

- Bachelor in Environmental Health, Fiji National University
- Bachelor of Environmental Health, Fiji School of Medicine
- Bachelor of Environmental Health, University of South Pacific

Irish Qualifications

- Bachelor of Science Degree in Environmental Health, Dublin Institute of Technology
- Bachelor of Science Degree in Environmental Health, University of Ulster, Jordanstown

South African Qualifications

- Bachelor of Science in Environmental Health from any South African University
- Bachelor of Technology: Environmental Health, Durban University of Technology
- National Diploma for Health Inspectors, with recent experience
- National Diploma in Public Health, from any South African Technikon
- National Diploma: Environmental Health, Durban University of Technology
- National Diploma in Environmental Health, from any South African Technikon
- National Diploma in Public Health, Department of National Education
- National Diploma in Public Health, Central University of Technology Free State (formerly the Technicon Free State), Bloemfontein

United Kingdom Qualifications

- Environmental Health Officers Education Board Diploma in Environmental Health
- Public Health Inspector's Education Board Diploma in Environmental Health
- Bachelor of Science Degree in Environmental Health, University of the West of England, Bristol (formerly Bristol Polytechnic)
- Bachelor of Science Degree in Environmental Health, University of Wales Institute of Higher Education, Cardiff
- Bachelor of Science Degree in Environmental Health, University of Edinburgh – Medical School, Edinburgh
- Bachelor of Science Degree in Environmental Health, University of Strathclyde, Glasgow
- Bachelor of Science Degree in Environmental Health, Leeds Metropolitan University, Leeds (formerly Leeds Polytechnic)
- Bachelor of Science Degree in Environmental Health, University of Greenwich, London
- Bachelor of Science Degree in Environmental Health, Kings College London, School of Life, Basic Medical and Health Sciences, London
- Bachelor of Science Degree in Environmental Health, Middlesex University, London
- Bachelor of Science Degree in Environmental Health, Manchester Metropolitan University (formerly Manchester Polytechnic)
- Bachelor of Science Degree in Environmental Health, Nothumbria University, Newcastle Upon Tyne
- Bachelor of Science Degree in Environmental Health, Nottingham Trent University, Nottingham
- Bachelor of Science Degree in Environmental Health, University of Salford, Salford
- Bachelor of Science Degree in Environmental Health, University of Ulster, Newtonabbey Co, Antrim
- Master of Science in Environmental Health, University of Birmingham, Birmingham
- Master of Science in Environmental Health, University of the West of England, Bristol
- Master of Science in Environmental Health, University of Derby, Derby
- Master of Science in Environmental Health, Kings College, London