



# UNIVERSITY OF TASMANIA

Department of Rural Health

## **Graduate Certificate and Graduate Diploma E-Health (Health Informatics)**

### **Introduction**

Health informatics is a multi-disciplinary, multi-dimensional field focussing on the collection, management, and use of health related data, information and knowledge. By its very nature, health informatics is challenging and complex. Yet it is this complexity that makes it such an intriguing, exciting and rewarding field in which to be involved. At the University of Tasmania, we emphasises an understanding of both the organisational and cultural environment of health services and computing and information systems tools and processes.

Health Informatics is an emerging discipline and profession in its own right. New career opportunities are emerging for health professionals with knowledge and skills in information management within health care systems. Employment may be found in acute and community settings in public and private systems organizations, in public health, pharmaceutical and other health care related industries and educational institutions.

The courses are suitable for both health professionals wishing to enhance their understanding of, and ability to work effectively with, information and communication technologies and for graduates who wish to pursue a career as health informatics specialists.

### **Objectives**

The course(s) have the following objectives:

- To produce graduates who understand the application of information technology and advanced telecommunications technology.
- To create an awareness of the increasing role and potential of information technology and communications technology for effective

and efficient health services, particularly for rural, remote and housebound consumers.

- To foster an awareness of the social, ethical and legal issues associated with the introduction and use of information technology and communications technology.
- To provide health professionals and others with the theoretical and practical knowledge which will enable them to take leading roles within the emerging field of Health Informatics.

### **Length of course and maximum time for completion**

The Graduate Certificate has a minimum completion time of 1 year part-time, over two semesters and a maximum 2 years part-time

The Graduate Diploma has a minimum completion time of 2 years part time, over four semesters and a maximum of 4 years part-time.

Graduates from the Diploma in E-Health (Health Informatics) may articulate into the [Masters in Health program](#) at the third year level

### **Teaching mode/delivery**

External, part-time, using a range of teaching and learning strategies.

Materials offer different learning pathways. Students may choose from traditional lecture-based learning, activity based learning or the web search pathway. This caters for a range of learning styles.

### **Course Structure**

The courses consist of a combination of compulsory units and electives as described below.

#### ***H5E Graduate Certificate in E-Health (Health Informatics)***

The Graduate Certificate comprises four units, three of which are the compulsory units:

- CRH500 An introduction to Health Informatics
- CRH501 Data, information and knowledge
- CRH503 Legal and ethical Issues of emerging health technologies

#### ***H6E Graduate Diploma of E-Health (Health Informatics)***

This course builds on the Certificate course, consisting of an additional two compulsory units and two additional electives.

Additional compulsory units are:

- CRH502 E-Health
- CRH504 The diffusion of health technology: change management

Electives for both courses may include:

- CRH505 Electronic health records: trends and issues
- CRH506 Understanding Health Informatics Research
- CRH507 Health Informatics Research Methods
- CRH508 Health Information Systems
- CRH509: Rural and Remote Health Informatics

Students may also enrol in relevant electives from other Faculties at UTAS or partner institutions. This will need to be approved by the course coordinator.

### **Admission Requirements**

To qualify for admission to the Certificate or the Diploma courses, applicants should:

- hold a three-year degree or a diploma with a major in a health related or communications technology area, **or**
- have experience and/or qualifications as deemed appropriate by the Head of School.
- For international students who do not use English as their first language, minimum requirements are IELTS Overall band 6.0, with no band less than 6.

### **Technology Requirements**

As the courses utilise online resources, students need to have regular access to email and the Internet. The following minimum system specifications are also recommended (these recommendations are based on the minimum requirements necessary for using the online learning software MyLO):

#### ***PC Configuration***

- 400 Megahertz Intel Pentium III Processor (933 preferred)
- 256 Megabytes RAM (512 preferred)
- 10 Gigabyte Hard Drive
- 17" Monitor 56.6 Kbps Modem ( Cable Modem / DSL preferred)
- Windows 98, 2000, or XP

#### ***MAC Configuration***

- 400 Megahertz iMac (933 preferred)

- 256 MB RAM (512 preferred)
- 10 Gigabytes Hard Drive
- 17" Monitor
- 56.6 K Modem (Cable Modem / DSL preferred)
- Macintosh OS 9

The following software or free downloads are also recommended:

- [Firefox](#) or Internet Explorer 6.0 or 7.0 with JavaScript and cookies enabled (IE8 currently has known issues with MyLO. If you have IE8 installed, there is a possible workaround available at <http://www.utas.edu.au/coursesonline/known-issues.htm>.)
- Microsoft Word 2000, or XP
- Microsoft PowerPoint 2000, or XP OR the free [PowerPoint viewer](#)
- [Adobe Acrobat Reader](#) for PDF files
- [Java Plug-in](#)
- [Quicktime](#)
- [Flash Player](#)

### **Credit for previous studies**

Passes in subjects or units in other courses (completed or otherwise) in this University or another approved tertiary institution (or other approved professional examining body) may be credited towards the Graduate Diploma, provided that the Faculty may specify what more a candidate so credited shall be required to do to qualify for the Graduate Diploma.

### **Fees**

This is Higher Education Contribution Scheme (HECS-HELP) program  
Information on fees for 2010 is available on the [Postgraduate Coursework web page](#)

## Unit descriptions

<b>Unit enrolment code</b>	CRH500
<b>Unit Title</b>	Introduction to Health Informatics
<b>Unit Description</b>	<p><b>Objectives:</b> At the completion of the Unit, students should have a greater understanding of:</p> <ul style="list-style-type: none"> <li>• The increasing influence of information technology and communications technology on our daily lives in general and health care in particular;</li> <li>• The scope, concepts and some common terms of health informatics;</li> <li>• The range of applications of health informatics in the areas of administration, education, clinical practice and research.</li> </ul> <p><b>Content</b> This Unit considers the increasing impact of technology in contemporary society focusing on health services. It explores some current applications of health informatics and identifies a number of issues associated with the use of technology in health care. The Unit provides a foundation for ongoing exploration of health informatics.</p>
<b>Teaching Staff</b>	Ms Sue Whetton
<b>Campus and mode</b>	Launceston, external, flexible delivery via Internet
<b>Unit weight</b>	12.5%
<b>Teaching pattern</b>	This is a self-directed learning unit. Students complete tasks and activities at their own pace, within the parameters of semester requirements.
<b>Prerequisites</b>	Nil
<b>Co requisites</b>	Nil
<b>Mutual exclusions</b>	Nil
<b>Assessment</b>	Continuous assessment by assignment/course work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
<b>Required texts</b>	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
<b>Recommended reading</b>	van Bommel, J. H., & Musen, M. A. (1997). Handbook of medical informatics. Heidelberg, Germany: Springer-Verlag. Hovenga, E., Kidd, M., & Cesnik, B. (1996). Health informatics - an overview. Melbourne, Australia: Pearson Professional. Coiera, Enrico, (2003), Guide to Medical Informatics, the Internet and telemedicine, 2nd Edition, Arnold, London Extensive online resources will be available via the Internet and the University library databases.
<b>Courses</b>	H5E, H6E,

<b>Unit enrolment code</b>	CRH501
<b>Unit Title</b>	Data, Information and Knowledge
<b>Unit Description</b>	<p><b>Objectives</b> At the completion of the Module students should be able to:</p>

	Describe how data and information can be used to create knowledge. Use knowledge of database principles. Identify, compare and contrast various taxonomies, classification systems, and nomenclatures. Explain the data sets, their uses and relevance to information systems. Apply concepts of database management in responding to a problem. <b>Content</b> This Unit focuses on database management systems, introducing key concepts data, information and knowledge in the context of relational database development as applied to health.
Teaching Staff	Ms Lauren Hoban,
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	Nil
Co requisites	Nil
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment/course work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
Recommended reading	Merida L. Johns (2002): Information Management for Health Professionals (2nd Edition). Delmar (Thomson Learning), Albany, New York Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E,

Unit enrolment code	CRH502
Unit Title	Health Online
Unit Description	<b>Objectives:</b> At the completion of this unit, students should have a greater understanding of: The drivers influencing the emergence and success of telemedicine, telehealth and health online projects; The range of clinical, educational, research and administrative applications, including major Australian initiatives in the area; The key issues and challenges to be faced when planning, implementing and evaluating health online applications and projects; Principles and techniques relating to the evaluation of technologies. <b>Content:</b> This Unit explores the changes occurring in the structure and delivery of health services as a result of technologies such as the Internet and

	telehealth. It considers the impact of such technology on consumers, communities, health professionals and health services.
Special Notes	This unit will be offered via electronic media.
Teaching Staff	Ms Sue Whetton, Dr Quynh Le
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	Nil
Co requisites	Nil
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment/course work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
Recommended reading	Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH503
Unit Title	Legal and Ethical Issues of Emerging Technologies
Unit Description	<p><b>Objectives</b> At the completion of this unit, students should have an understanding of legal and ethical issues relating to the introduction of technology to the health service environment and of current measures to</p> <p><b>Content</b> This unit explores issues such as duty of care and negligence, privacy and confidentiality, data management, access and use as they relate to the use of information technology in health.</p>
Special Notes	This unit will be offered via electronic media.
Teaching Staff	Ms Sue Whetton, expert advisor: Mr Martin Harris
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge CRH502: Health Online
Co requisites	Nil
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the

	assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
Recommended reading	Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH504
Unit Title	The Diffusion of Health Technology (Managing Change)
Unit Description	<p><b>Objectives</b> At the completion of this unit, students should have an understanding of current theory and practice relating to the introduction of technology to the health service environment.</p> <p><b>Content</b> This unit explores issues relating to change management, particularly current theory and research on the successful introduction of technology in the health environment.</p>
Special Notes	This unit will be offered via electronic media.
Teaching Staff	Sue Whetton
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	CRH500:Introduction to Health Informatics
Co requisites	CRH501: Data, information and Knowledge CRH502: Health Online
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
Recommended reading	Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH505
Unit Title	Electronic Health Records
Unit Description	<p><b>Objectives</b></p> <p>At the completion of the unit, students should have an understanding of</p> <p>The nature and purpose of various types of electronic health record</p> <p>The need for standardised vocabularies and operational standards</p> <p>Issues and perspectives around privacy and security</p> <p><b>Content:</b></p> <p>This unit explores the evolution of the electronic health record. It explores system requirements, vocabulary issues and standards. Privacy and security issues are explored in the context of providing high quality health care.</p>
Special Notes	This unit will be offered via electronic media.
Teaching Staff	Ms Sue Whetton
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge
Co requisites	Nil
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment work. As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne National Electronic Health Records Taskforce, (2000), A Health Information Network for Australia, Commonwealth Department of Health and Aging, Australia.
Recommended reading	Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Coiera, Enrico, (2003), Guide to medical Informatics, the Internet and telemedicine, 2nd Edition, Arnold, London
Courses	H5E, H6E

Unit enrolment code	CRH506
Unit Title	Understanding Health Informatics Research
Unit Description	<p><b>Objectives:</b></p> <p>At the completion of the unit, students should be able to</p> <p>Discuss the relationship between theory and research, and their application to health informatics;</p> <p>Identify the methodological foundations that inform research;</p> <p>Identify components of the research product, and</p> <p>Critically evaluate published research in health informatics in the context of their professional practice.</p>

	<p><b>Content:</b>  This unit aims to provide students with the ability to utilise health informatics research in their professional environment. It explores theoretical approaches to and practical applications of research. This includes an exploration of the influence of the traditional, constructivist and critical paradigms on health informatics research. Examples of published research will be dissected into key components and analysed in the context of professional practice. While the unit focuses on critically evaluating published health informatics research, it does not require students to plan and implement research. The unit provides a foundation for the unit Health Informatics Research Methods.</p>
Teaching Staff	Ms Jessica Whelan
Campus and mode	Launceston, external, flexible delivery via Internet or CD
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace, within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge CRH502: Health Online
Co requisites	Nil
Mutual exclusions	Nil
Assessment	As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	W. Lawrence Neuman (2000) Social Research Methods: Qualitative and Quantitative Approaches (4th Edition).
Recommended reading	Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH507
Unit Title	Health Informatics Research Methods
Unit Description	<p><b>Objectives</b></p> <p>At the completion of the unit students should be able to:</p> <p>Frame research oriented questions about clinical, professional, educational, organisational aspects of health informatics.</p> <p>Discuss advantages and limitations of different research designs in addressing particular research questions</p> <p>Write an outline for an original research study that includes a clearly focused question and appropriate study design and methods, and which demonstrates and understanding of practical and ethical considerations.</p> <p><b>Content</b></p> <p>This unit focuses on the steps involved in planning and implementing a piece of research. It aims to develop an understanding of the planning, implementation and reporting processes used in health informatics research It includes issues relating to the determination of research questions, hypotheses, data collection and analysis methods. The ethics involved in planning, conducting and reporting research is an integral part of the unit. The unit will include the design of data collection tools and an introduction to quantitative and qualitative data analysis techniques. Students will plan and develop a research proposal, including preliminary development of research instruments. They will not implement a research project.</p>
Teaching Staff	Ms Jessica Whelan
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge CRH502: Health Online
Co requisites	Nil
Mutual exclusions	Nil
Assessment	As a flexible learning course, students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	W. Lawrence Neuman (2000) Social Research Methods: Qualitative and Quantitative Approaches (4th Edition).
Recommended reading	Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH508
Unit Title	Health Information Systems
Unit Description	<p><b>Objectives:</b>  At the completion of the unit, students should be able to:  Explain and critique systems theory  Discuss tasks to be completed at each stage of the health information systems life-cycle  Discuss strategies to resolve technical issues which may be encountered at each phase of the life cycle;  Discuss strategies to resolve people which may be encountered at each phase of the life cycle;  Describe the impact and role of the informatics professionals and the informatics/IT Department.</p> <p><b>Content:</b>  This unit builds on the unit CRH501: Data, Information and Knowledge. It is a detailed study of the development, implementation and maintenance of health care systems. It includes an exploration of systems theory as it applies to health information systems. The unit considers the life cycle of a health information system, including strategic and tactical information planning and project management and explores the impact on the organisation of each phase of the life cycle. It explores both technical (infrastructure, hardware &amp; software, Standards &amp; Codes) and people issues (education &amp; skill development, changes to roles) which need to be resolved in the process of implementing a successful health information system. The unit also explores the role and impact of the informatics professional and the informatics/IT department within the health organisation</p>
Teaching Staff	Sue Whetton, Dr Quynh Le
Campus and mode	Launceston, external, flexible delivery via Internet or CD
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace, within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge CRH502: Health Online
Co requisites	Nil
Mutual exclusions	Nil
Assessment	As a flexible learning course, e-health (Health Informatics) students are able to select from alternative learning pathways. Three assessment tasks will be required. Specific configuration of the assessment will depend on the learning pathway selected by the student.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne Merida L. Johns (2002): Information Management for Health Professionals (2nd Edition). Delmar (Thomson Learning), Albany, New York
Recommended reading	Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Extensive online resources will be available via the Internet and the University library

	databases.Coiera, Enrico, (2003), Guide to medical Informatics, the Internet and telemedicine, 2nd Edition, Arnold, London Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

Unit enrolment code	CRH509
Unit Title	E- Health, rural, remote, isolation
Unit Description	<p><b>Objectives:</b> At the completion of the Unit, students should have a greater understanding of: Contemporary models of rural, remote and isolated health service delivery; The challenges inherent in these models relating to people, health services and resources, and The potential of health informatics in addressing these challenges.</p> <p><b>Content</b> Geographical and social isolation, economic, political and demographic issues, and infrastructure constraints must be considered when planning and delivering health care services. The potential of health informatics to address these factors has been recognised although stakeholders identify different priorities for the application of health informatics technology. This unit explores trends in the use of technology in health services for rural, remote and isolated consumers and considers potential consequences for stakeholders.</p>
Teaching Staff	Professor Judi Walker
Campus and mode	Launceston, external, flexible delivery via Internet
Unit weight	12.5%
Teaching pattern	This is a self-directed learning unit. Students complete tasks and activities at their own pace, within the parameters of semester requirements.
Prerequisites	CRH500: Introduction to Health Informatics CRH501: Data, information and Knowledge CRH502: Health Online
Co requisites	Nil
Mutual exclusions	Nil
Assessment	Continuous assessment by assignment/course work. As a flexible learning course, e-health (Health Informatics) students are able to negotiate assignment tasks. Two assessment tasks will be required.
Required texts	Whetton, S. (2005), Health Informatics: a socio-technical perspective, Oxford University Press, Melbourne
Recommended reading	Engelhardt, S. and Nelson, R., (2002): Health Care Informatics: An Interdisciplinary Approach. Mosby, St Louis. Extensive online resources will be available via the Internet and the University library databases.
Courses	H5E, H6E

**For more information**

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<http://www.ruralhealth.utas.edu.au/informatics/unit-welcome.asp>