WM00E-15 Introduction to Health Informatics

22/23

Department
> WMG

Level
> Taught Postgraduate Level

Module leader
> Theodoros Arvanitis

Credit value
> 15

Module duration
> 1 week

Assessment
> Multiple

Study location
> University of Warwick main campus, Coventry

Description

Introductory description

The module explores the science of dealing with information management and computer-based applications in healthcare. It is a primer on principles of data coding and classification in healthcare; principles of medical decision making and methods for clinical decision support; the design, implementation and operational management of clinical information systems, including laboratory-based, primary care and hospital-based systems; principles of communication, security, information governance and procurement challenges for patient-centric healthcare information systems. Some specific aims include:

- Provide an understanding of the basic structures of information needed when making clinical decisions in order to prioritise data collection
- Understanding the critical importance of accuracy and data quality in the context of decision making.
- Examining the role of the patient in contributing and accessing information.
- Understanding and assessing various health information systems

Module aims

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Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

1. Information management in healthcare: biomedical and health data acquisition, storage, interoperability and use.
2. Introduction to clinical classification, coding & clinical vocabularies in the context of digitally enabled health information systems; standards in healthcare information.
3. Introduction to software design methods for interactive health information systems.
4. Principles of evaluation of health information systems design.
5. Basic principles of clinical decision support and their application in health information systems.
6. Contemporary topics in health informatics: e-health, m-health, specialist systems (e.g. Picture Archiving and Communication Systems- PACS in Clinical Imaging), clinical research informatics.

Learning outcomes

By the end of the module, students should be able to:

- 1) Critically review current trends and application of informatics in healthcare
- 2) Synthesize and apply an evidence-based approach in the practical application of health informatics within the healthcare enterprise
- 3) Systematically identify and understand relevant IT standards & associated implementation practice
- 4) Critically understand the main technologies pertinent to modern health IT systems
- 5) Analyse the role of health IT in day to day healthcare operations
- 6) Critically appreciate the processes that relate to health information systems development, testing and deployment
- 7) Integrate health IT in the design of healthcare operations

Indicative reading list

Sample bibliography

1. E. H. Shortliffe and J. J. Cimino (Eds.), Medical Informatics: Computer Applications in Healthcare and Biomedicine, Springer, 2006.
2. E. Coiera, Guide to Health Informatics (2nd edition), Arnold, 2003.
3. E. Hovenga, M.Kidd, B.Cesnik (Eds.), Health Informatics: An Overview, Churchill Livingstone, 1996. On-line version at http://www.achi.org.au/docs/HNI_Book/ possible restrictions to access and content might apply.
4. J. H. Van Bemmel and M. A. Mussen (Eds.), A Handbook of Medical Informatics, Springer, 1997.
5. A selection of research papers from the "Yearbook of Medical Informatics" collections (1995-2015) of the International Medical Informatics Association (IMIA) & various peer-reviewed scientific journals (1980-2015).

[View reading list on Talis Aspire](#)

Subject specific skills

Current trends and application of informatics in healthcare; evidence-based synthesis; Healthcare IT standards & associated implementation practice; health information systems development, testing and deployment; Healthcare IT operations.

Transferable skills

Critical thinking; problem solving; communication; Teamwork and working effectively with others; information literacy; digital literacy; professionalism; Organisational awareness.

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	14 sessions of 1 hour (9%)
Practical classes	6 sessions of 1 hour (4%)
Assessment	110 hours (73%)
Total	150 hours

Private study description

No private study requirements defined for this module.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A3

	Weighting	Study time
Assessed work as specified by department	100%	110 hours

Part – 1 around 2000 words with in-module seminar presentation (30%)

Part-2 around 4000 words (70%)

Assessment group R1

	Weighting	Study time
Assessed work as specified by department	100%	

100% Post Module Assignment

Feedback on assessment

Formative (oral) feedback during practical classes. Written feedback on presentation and slides following the completion of seminar class. Written feedback on post-module assignment.

Availability

Courses

This module is Core optional for:

- Year 1 of TWMS-B9AA Postgraduate Healthcare Operational Management