

The University of Sheffield
Department of Information Studies
Module Outline 2009-2010

Module Title:	Information Systems in Health
Module Code:	INF6512
Online Teaching Resources:	MOLE, WIMBA
Pre-Requisites:	None
Status:	Approved Module
Credits:	15 credits
Semester:	SPRING
Timetabling:	Distance Learning (10 x 2hr lectures; 5 hrs problem solving classes; 125 hrs self study) Weeks 1-12: DAY: TIME (WIMBA) Thursday 12.00 – 14.00 [TBC]
Module Coordinator:	Dr. Paul Clough (Lecturer, Information Studies)
Other Lecturers:	Dr. Mark Sanderson (Professor, Information Studies)
Version Date:	18th January 2010

Overview:

An Information System (IS) is an arrangement of information (data), processes, people and information technology that interact to collect, process, store and present information needed to support decision-making and information management within organizations. Computer-based information systems are increasingly important within healthcare organizations and being utilized to support not only traditional data processing activities, but also strategic management objectives. This module addresses key themes in healthcare information systems as they aim to provide the necessary infrastructure needed to manage and produce relevant, timely and accurate information to support the healthcare organisation and its users. Lectures will be used to introduce key concepts to of information systems within national (and international) healthcare services, supplemented with additional self-study material. The lecture course for this module (10 lectures) is divided into three main sections: (1) Overview of Health Information Systems; (2) Developing the Information System; and (3) Supporting the Information System. Areas covered include: information systems theory, the healthcare organisation and its environment (including administrative, acute and primary care settings), planning and strategy, systems development, evaluation, supporting infrastructures and technologies, and data protection and security.

Module Aims:

This module aims to help students recognize and assess the role of Information Systems within healthcare, particularly from a management and strategic perspective.

Learning Objectives:

By the end of the unit, a candidate will be able to demonstrate the ability to:

- Describe the key principles of information systems and how they are used in healthcare organisations.
- Assess the different areas of healthcare provision and the types of system which are used.
- Recognise the importance of quality information as a critical asset to healthcare organisations.
- Analyse the main activities required to implement effective information systems within a national (and international) context.
- Explain how information systems are developed and maintained within organisations.
- Evaluate the capabilities and roles of computing and data communications in healthcare provision.
- Assess how issues of data protection and security affect healthcare information systems.
- Interpret approaches which can be used to evaluate the impact/success of information systems and factors contributing to failures.

Learning Methods:

Distance learning software and other interactive technologies will be used to facilitate communication, teaching and learning. Students will be expected to carry out independent study and to prepare for interactions with tutors and the class by undertaking guided reading and/or specified learning activities, including analysis of case studies.

Assessment:

Essay (3,000 words, excluding Abstract, Bibliography and Appendix). In the essay students will be required to demonstrate their learning from the module, their ability to synthesise knowledge in the area and their use of appropriate sources of health information.

Coursework submission date:	Friday 21 st May (end Week 12)
Coursework reports will be returned to students by:	Friday 11 th June (end Week 15)

Syllabus Content:

Week	Lecture	Date
	Overview of Health Information Systems	
1	Introduction to Information Systems (PC)	11 th Feb
2	Health Information Systems and Corporate Applications (PC)	18 th Feb
3	Information Systems in Primary and Acute Care (PC)	25 th Feb
4	Tutorial and support	4 th March
	Developing the Information System	
5	Information Systems Development (PC)	11 th March
6	Information Systems Planning (PC)	18 th March
7	Information Systems Strategy (PC)	15 th April
8	Tutorial and support	22 nd April
	Supporting the Information System	
9	Computing Technologies and Data Communications (MS)	29 th April
10	Data Protection and Security (MS)	6 th May
11	Evaluating Information Systems (Use, Impact, Success & Failure) (PC)	13 th May
12	Tutorial and support	20 th May

References:

In addition to the recommended books below, relevant papers and case studies will be available online (MOLE). The course is also supported by a set of study notes from a previous course on IM&T in Healthcare which will be referred to throughout the course. All papers are electronically accessible, therefore every student will be able to download them free of charge. Sources considered as key references are highlighted in bold.

Recommended Course textbook

This is an excellent introduction to Information Systems in Healthcare and specifically aimed at the health manager and executive. This book forms the basis for much of the material discussed in the course and it is recommend that students purchase this book (if it is not made available electronically through the University Library).

- **Smith, J. (2000) "Health Management Information Systems: A Handbook for Decision Makers." Open University Press.**

General Information Systems

- Avison, D. and Fitzgerald, G. (2006) "Information Systems Development." (4th edition), McGraw-Hill Higher Education.
- Benynon-Davies, P. (2002) "Information Systems: An Introduction to Informatics in the Organisation." (2nd edition), Palgrave Macmillan.
- **Chaffey, D. and Wood, S. (2004) "Business Information Management: Improving Performance Using Information Systems." Financial Times/ Prentice Hall.**
- Laudon, K. and Laudon, J. (2004) "Management Information Systems: Managing the Digital Firm." (10th edition), Pearson Education/Prentice Hall Inc.
- Whiteley, D. (2004) "Introduction to Information Systems (Organisations, Applications, Technology and Design)." Palgrave MacMillan.

Health Information Systems

- Ball, M. et al. (1995) "Healthcare Information Management Systems (A Practical Guide)." Second Edition, Springer-Verlag.
- **Bath, P.A. (2008) "Health informatics: current issues and challenges." Journal of Information Science. 34 (4) 501-518.**
- Haux, R. (2002) "Health care in the information society. A prognosis for the year 2013". International Journal of Medical Informatics. 66 (3) 3.
- **Haux, R. (2006) "Health information systems - past, present, future." International Journal of Medical Informatics. 75 (3/4) 268-281.**
- Hendy, J. et al. (2007) "Implementing the NHS information technology programme: qualitative study of progress in acute trusts." BMJ. 334: 1360
- Juma, C. and Yee-Cheung. (2005) "Reinventing global health: the role of science, technology, and innovation." The Lancet , 365 (9464) , 1105-1107
- Smith, R. (1997) "The future of healthcare systems. Information technology and consumerism will transform health care worldwide." (Editorial). BMJ. 314: 1495. [Online] Available at URL: <http://www.bmj.com/cgi/content/full/314/7093/1495>. Last accessed 10/10/2008.
- van Bommel, J.H. and Musen, M.A. (1997) "Handbook of Medical Informatics." Springer-Verlag.
- **Wager, K., Lee, F. and Glaser, J. (2005) "Managing Health Care Information Systems (A Practical Approach for Health Care Executives)." Jossey-Bass.**

INF6512 – Information Systems in Health

Assessment: Coursework

An essay: (3,000 words excluding Abstract, bibliography/References).

Topic:

The essay should be the critique of a health information system of your choice (it would be sensible to select an information which you use or you are familiar with). Select a health information system and use topics from the lectures to structure a description of the system. You may want to include information on aspects such as motivation for the system, the users and their information needs, operational challenges faced by the system, the inputs, process and outputs of the system, sub-systems, how the system interacts with other systems (i.e. its environment), the strategic goals of the system, how the system fits within the national (and/or international) healthcare context, and key technologies used in the supporting infrastructure. You should also provide a critical assessment of the success (or failure) of the system, potential limitations or weaknesses of the system and potential future improvements.

The essay should include a structured informative abstract (no more than 250 words – this is not included in the word count for the assignment).

Note about word count

Submissions differing from the specified word length by more than 5% will be penalised as detailed at <http://www.shef.ac.uk/is/current/length.html>. There are also penalties for late submission, as outlined at <http://www.shef.ac.uk/is/current/latesub.html>.

You must include a note of the word count at the end of your assignment. Word count should exclude title, abstract, tables, diagrams, bibliography and appendices, but include all quotations and citations within the text. Referencing should be in Harvard style as detailed in the Student Handbook.