

1. COURSE TITLE/NUMBER, NUMBER OF CREDIT HOURS:

**ISM 4381
Section 001
Healthcare Information Systems
3 credit hours**

2. COURSE PREREQUISITES: No prerequisites

This course is part of the College of Business Major in Management Information Systems. If used towards a major or minor, a grade of “C” or better is required to pass the course.

3. COURSE LOGISTICS:

Term:	Fall 2012
Class Location:	FL 411
Time:	Monday 4:00 – 6:50

4. INSTRUCTOR CONTACT INFORMATION:

Instructor:	Tamara Dinev, Ph. D.
Office Address:	FLH 219
Office Hours:	Monday 2:30 – 3:30 pm Wednesday 2:30 – 3:30 pm and by appointment
Phone:	(561) 297-3181
FAX:	(561) 297- =3043
E-mail:	tdinev@fau.edu

5. TA CONTACT INFORMATION: There is no TA in this class

6. COURSE DESCRIPTION: The course introduces the fundamentals of Information Systems used for managerial and clinical support in healthcare, including Electronic Health Records. Covered are the concepts of healthcare delivery systems, their integration with workflow processes and employee and patient management, clinical data collection, storage management, and data confidentiality and security.

7. COURSE OBJECTIVES/STUDENT LEARNING OUTCOMES. After completing the course, students will be able to:

1. Identify the major types of information system applications used in healthcare organizations
2. Recognize emerging trends affecting the development of healthcare information systems
3. Identify policies which need to be developed and adopted to ensure security of health records
4. Analyze health services management objectives and translate them into output requirements, while integrating clinical and business information;
5. Define data quality control tools and system protection from viruses, spyware and botnets;
6. Describe the operation of computers, input/output devices, secondary storage devices, and communication networks which support information systems;
7. Compare the costs and benefits of various types of health care data processing systems, and make decisions concerning the purchase and use of such systems;
8. Understand the features of software designed for health care personnel management, facilities management, equipment management and supply chain management;

9. Understand the features of software designed for electronic medical records, automated patient scheduling, automated prescription generation, and other health care clinical functions;
10. Explain medical records privacy and ethical issues related to patient information use data encryption tools, digital signatures and other user authentication methods to protect medical records privacy.

8. COURSE EVALUATION METHOD:

Component:	Weight
Homework	35%
Class Participation	20%
Term Paper	10%
2 Exams	35%, equal weight each

9. COURSE GRADING SCALE:

A = (93-100) %	C = (73-76.99) %
A- = (90-92.99) %	C- = (70-72.99) %
B+ = (87-89.99) %	D+ = (67-69.99) %
B = (83-86.99) %	D = (63-66.99) %
B- = (80-82.99) %	D- = (60-62.99) %
C+ = (77-79.99) %	F = < 60 %

Student mastery of the concepts of the course will be demonstrated through the use of homework problems solved by the student, in class discussions of topics between the student and the instructor, in-class team presentations and a combination of in-class and take-home exams and a term paper.

10. POLICY ON MAKEUP TESTS, LATE WORK, AND INCOMPLETES.

COURSE COMPONENTS.

Homework: Homework is to be turned in by 4:00 pm on Monday of the week assigned (see course content and tentative schedule attached). Late homework (homework turned in before the assignment has been discussed in class) will lose 10% of its value. Homework turned in after an assignment has been discussed in class returned and/or a solution posted will lose 75% of its original value.

Teams: Students will be divided into teams for portions of the course.

Class Participation: There will be a discussion of the materials contained in the text. Two teams will be responsible for leading the discussion each week. One team will lead the discussion and the other will comment on their presentation. However, this is meant to be a class activity so all members of the class are expected to have read the material and be prepared to comment on it.

Each team is to use library resources and/or the internet to find at least two unique references concerning business intelligence/business analytics from **different** sources, analyze the articles and prepare a **wiki** page for each article. A second team will be assigned to edit the **wiki** for each article to insure completeness and readability. All students will be responsible for reading the wikis and participating in the class discussion over the articles, led by the team which created the Wiki. Articles must be substantive, i.e. an announcement of a new product or a new release about a product does not count. The team will turn in a copy of the article when each **wiki** is posted.

Term Paper: The term paper will be a research paper covering an area of healthcare information systems of interest to the students. Each team will submit a brief outline of the area to be covered the week of 2/20. The paper itself is due the week of 4/23, when each team will present the results of their research.

Exams and Exam Make-Up Policy: There will be two exams during the semester. The last one (the final) is cumulative in this course. These exams will be taken on-line during the time periods noted in the course content outline.

A student who is unable to take an exam due to an emergency must inform me of that fact on or earlier than the day of the exam (except for extreme cases, i.e., you are in a coma in the hospital due to a car accident suffered on the way to the exam) and arrange for a make-up exam before the graded exam is returned to the class. Any student requiring a make-up will have to document his/her excuse (e.g., a letter from a physician written on the physician's letterhead stating the nature of illness *and its severity*). Exams missed without prior approval (or documented proof that the unapproved absence was unavoidable) cannot be made up. In no event will a make-up be given after the graded exam is returned to the class, which is usually the week after the exam is scheduled.

Incompletes: University policy states that an incomplete may be given only if a student has a passing grade in the course. An incomplete is only meant for students who are unable to complete the course due to severe hardships beyond their control. It is not meant to accommodate students who decide that the workload is too heavy. If an "I" is given, work must be completed within the time period specified by the instructor which is not to exceed 12 months from the time the incomplete is given.

Religious Accommodation: In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments. For further information, please see <http://www.fau.edu/academic/registrar/catalog/academics.php>

Students Representing The University At Official Functions: Students representing the University at official functions will not be penalized for missing exams or quizzes while performing these functions. Reasonable accommodations will be made to allow the student to make up the work, usually after the majority of the class has taken the exam or quiz. It is up to the student to bring to the instructor's attention the need for the accommodation, both by presenting the instructor a University form attesting to the need for the accommodation and by reminding the instructor of the event close to its occurrence.

11. SPECIAL COURSE REQUIREMENTS:

Blackboard: You must use Blackboard to retrieve class notes, take tests, and to receive class e-mail from me. Go to <http://blackboard.fau.edu> to log in.

Web Assist Course: This course will make use of the Blackboard Internet feature. Lecture material and homework assignments will be posted on Blackboard, with due dates. Grade information will also be found there. We will experiment with an occasional on-line session using Blackboard Collaborate. Additionally there will be occasional on-line discussion periods. The times of these discussion periods will be determined as the semester progresses.

12. CLASSROOM ETIQUETTE POLICY: Inappropriate behavior distracts other students and interferes with their learning experience. Inappropriate behavior would include rude and inappropriate comments in either live or on-line discussions. Additionally, in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions. Behavioral deviation from these policies will not be tolerated.

Since it is my responsibility to provide an environment that is conducive to learning for everyone in the class, I will deduct points from the final grade of a student who chooses to repeatedly distract others. In particularly egregious cases, I will have the student permanently removed from the class.

13. DISABILITY POLICY STATEMENT: In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute course work must register with the Office for Students with Disabilities (OSD) – in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

If you are recognized as a student with learning disability by the university, please provide the necessary documentation as soon as possible (no later than the first two weeks of the semester) so that I can make arrangements for you to take tests, etc., according to the prescribed procedures. If you have any other special needs please let me know. If you don't inform me of your special status and arrange for the paperwork with the Office Students with Disabilities, you will be given the same status as the rest of the students in class until you have provided the required information and the Office Students with Disabilities. Grades will not be changed retroactively based on any information provided late.

For further information, please see http://www.fau.edu/eop/ada/ada_policy.php

14. CODE OF ACADEMIC INTEGRITY POLICY STATEMENT:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see the College of Business Academic Honesty Policy at <http://business.fau.edu/undergraduate/current-students/academic-policies/academic-honesty-policy/index.aspx>.

While the FAU Honor Code governs all student activities throughout the course, there are some specific comments which are applicable.

Homework is to be an individual effort. It is certainly permissible to work with other students on assignments, but the final result turned in must be your own work. It is almost impossible for a program of any size above trivial to use identical variables, algorithms and computer memory. Having said that, you may incorporate code you find from other sources as long as you properly reference the sources. (Reuse of code is one of the objectives of object oriented programming after all). However, cheating, plagiarism, and unauthorized collaboration are unacceptable and subject to disciplinary actions. Plagiarism is turning in someone else's ideas as your own work. Cheating is copying from someone or giving your work to someone else. Such actions may include an "F" in the course and the placement of a letter of fact in your student record in accordance with the rules of the University and the College of Business.

15. REQUIRED TEXTS AND READINGS:

Austin, Charles J. and Stuart B. Boxerman, Information Systems for Health Care Management, Sixth Edition, (Chicago: Health Administration Press), 2011.

The CEO's Guide To Health Care Information Systems, 2nd Edition, 2010
Joseph M. Deluca, Rebecca Enmark, Jossey-Bass A Wiley Company, ISBN 0-7879-5277-X

16. SUPPLEMENTARY/RECOMMENDED READINGS

Additional readings may be assigned during the semester as part of the homework or project components.

17. COURSE TOPICAL OUTLINE, INCLUDING DATES FOR EXAMS/QUIZZES, PAPERS, COMPLETION OF READINGS: The table below contains a schedule of topics by week. Homework assignments over the material will be found in the assignments section of Blackboard. Assignment due dates are given with the assignments in Blackboard.

Tentative Schedule

Week	Topic	Text	Homework
1	Introduction	Ch 1	
2	Operational and Strategic Uses of Information Systems in Health Care Management and Health Insurance;	Ch2	
3	Systems Analysis I: Analyzing Organizational Activities and Procedures; Flowcharting	Ch 3, 4	
4	Systems Analysis II: Translating Organizational Activities Into Output Requirements; Input Design I: Derivation of Input Content From Output Requirements	Ch 6	HW 1
5	Input Design II: Data Quality Control; Viruses and Spyware;	Ch 7 & 8	HW 2
6	Internal Organization of the Information Systems. System Architecture; Insider Cyber Threats	Ch 9	HW 3
7	Health Care Applications Software I	Ch 10	HW 4
8	Mid Term Exam		
9	Health Care Applications Software. Electronic Medical (Health) Records; Patient Scheduling Software,	Ch 5	
10	Data Communications; The Internet; Distributed Processing;	Ch 11	
11	Information Systems to Support Integrated Delivery Systems; Web-based Medical Records	Ch 12	
12	Medical Records Privacy and Ethical Issues Related to Patient Information;	Ch 13 & 14	HW 5
13	The Health Insurance Portability and Accountability (HIPAA);	Ch 15	
14	Data Encryption and Digital Signatures; Other Methods of User Authentication	TBA	HW 6
15	Special Topics	TBA	
16	Team Paper presentations	Ch 16	HW 7
17	Final Exam		

The above is tentative and I reserve the right to change it depending upon the progress of the class.

REFERENCES:

Eckman, B.A., et al., "Varieties of Interoperability in the Transformation of the Health Care Information Infrastructure," IBM Systems Journal, 46(1), 2006.

IBM, "Patient-centric: the 21 st Century Prescription for Health Care," IBM White Paper, May 2006.
<http://www-304.ibm.com/jct03004c/tools/cpeportal/fileserve/download19/61749/PatientCentricBriefing.pdf?contentid=61749>

Berente, N. and K. Lyytinen, "Iteration in Systems Analysis and Design in Cognitive Processes and Representational Artifacts," Case Western Reserve University, Working Papers on Information Environments, Systems and Organizations, (5)4, No. 11, 2005,

Moskowitz, Jeremy, "Speech Recognition With Windows"
http://www.microsoft.com/windowsxp/using/setup/expert/moskowitz_02september23.msp

Allied Business Intelligence, "The History and Technology of Radio Frequency Identification," 2003, 14pp.

Trend Micro , "Taxonomy of Botnet Threats," 2006.
<http://us.trendmicro.com/imperia/md/content/us/pdf/threats/securitylibrary/botnettaxonomywhitepapernovember2006.pdf>

Trend Micro , "Botnets and Phishing," 2006
http://us.trendmicro.com/imperia/md/content/us/pdf/threats/securitylibrary/wp01_phishingfinalproof.pdf

CERT, "Preliminary System Dynamics Maps of the Insider Cyber-threat Problem," January 27, 2005, 36pp <http://www.cert.org/archive/pdf/InsiderThreatSystemDynamics.pdf>

IBM Healthlink (IBM Portfolio of Health Care Applications, 2010) http://www-304.ibm.com/jct03004c/businesscenter/smb/us/en/contenttemplate/gcl_xmlid/35009

Zakon, Robert H., "Hobbes' Internet Timeline," v. 8.2, 2006, 28pp.
www.zakon.org/robert/internet/timeline/

Electronic Privacy Information Center, "Medical Privacy,"
<http://www.epic.org/privacy/medical/default.html> , 2007, 20pp.

U.S. Department of Health and Human Services, "Administrative Simplification Under HIPAA: National Standards for Transactions, Security and Privacy,"
www.hhs.gov/news/press/2002pres/hipaa.html, 2003, 4pp.

U.S. Department of Health and Human Services, "Standards for Privacy of Individually Identifiable Health Information," <http://aspe.os.dhhs.gov/admsimp/final/pvcguide1.htm>, 2003, 34pp.

"Iris Scanning as a Form of Biometric Identification: The IrisAccess 4000," 2007.
<http://lgiris.com/download/brochure/MainBrochure.pdf>

"Encryption Software Review," NetAction, 2005, 2pp. http://www.netaction.org/encrypt/best_crypt.html

Electronic Medical Records Software

<http://www.mdsmedicalsoftware.com/medicalsoftware/EMR/allscripts/index.php>

Emergency Department Information System

http://www.wellsoft.com/product_overview/product_overview.php

Employee Scheduling

<http://www.celayix.net/default.asp>

<http://www.cybershift.com/index.asp>

Hospital Enterprise-Wide Software

<http://www.cerner.com/public/>

<http://www.gehealthcare.com/usen/products.html>

http://www.medical.siemens.com/webapp/wcs/stores/servlet/CategoryDisplay~q_catalogId~e_-1~a_categoryId~e_100010~a_catTree~e_100010~a_langId~e_-1~a_storeId~e_10001.htm

Hospital Laboratory Management

<http://www.capterra.com/lab-management-software>

Hospital Medical Records Coding and Billing

<http://www.ingenix.com/Products/Hospitals/>

ICU Tele-Monitoring

<http://visicu.com/products/index.html>

Medical Decision Support

<http://www.logicalimages.com/prodVDx.htm>

Pharmacy Management Services and Software

http://www.mckesson.com/en_us/McKesson.com/For%2BPharmacies/Retail%2BRegional%2BChains/Pharmacy%2BManagement%2BSoftware%2Band%2BServices/Pharmacy%2BManagement%2BSoftware%2Band%2BServices.html

<http://www.ingenix.com/Products/Pharma/>

Outpatient Office Management

<http://www.ingenix.com/Products/Physicians/>

Radiology RIS/PACS/Teleradiology

<https://www.merge.com/NA/estore/software.aspx>

Supply Chain Management

http://www.steris.com/lifesciences/ser_edi.cfm