



**National University**  
**School of Health and Human Services**

**Course Outline:**

**Course Title and Code:** Informatics for the Health Professionals, HSC 410

**Course Textbook:** Medical Informatics: Practical Guide for the healthcare Professional 2007 (or recent edition). By Robert Hoyt, M.D., Melanie Sutton, Ph.D., Ann Yoshihashi, M.D. Publisher: Lulu.com (June, 2007 or recent edition); ISBN-10: 1430321628/ISBN-13: 978-1430321620

In addition, students are encouraged to check the recommended references and the webliography/bibliography mentioned below.

**Instructor:**

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**Course Prerequisite(s):** HSC 400 Management for Health Professions

**Course Description:**

This course focuses on the role of informatics in contemporary health care. Wireless and mobile computing, maintaining data integrity, information security and confidentiality and HIPAA, telehealth, and electronic health records (HER) will be explored (see the University' Catalog).

## **Learning Outcomes:**

Upon completion of this course, the student will be able to:

- Discuss the design, management, and use of health care data and health information systems.
- Discuss the integration and assimilation of technology in the professional's daily life.
- Discuss health care as information dependent and market driven and the implications for health professionals.
- Discuss the advantages and disadvantages of health care data including patient-specific data, aggregate data (such as performance data, utilization review and risk management data), knowledge-based data (used in policy planning and decision-making) and comparative community-wide data (used in policy development) external to the institution.
- Identify information that draws value in decision-making, evaluation, planning, marketing and policy.
- Compare and contrast mobile and wireless devices including personal digital assistants in terms of basic technology and implications for use in healthcare.
- Identify and evaluate examples of Internet and World Wide Web resources that may be useful to healthcare professionals and consumers.
- Discuss the various types of information systems used within healthcare institutions.
- Analyze the impact of HIPAA privacy and security requirements on the health care system and for the protection of information and security.
- Compare and contrast the computer-based patient record (CPR) and the electronic health record (EHR).
- Discuss the relationship between contingency planning and disaster recovery.
- Compare and contrast the advantages and disadvantages of telehealth, the legal and practice issues, and implications for the health professions.
- Utilize a CPR or EHR in client care.

## **Course Requirements:**

- Written report discussing the use of systematic observations, documentation and other effective assessment strategies in partnership with patients, families, and other professionals using hand held devices and the EHR. Use evidence-based references as appropriate. Use APA form and style.
- Develop an electronic database of resources that would be useful for a health professional and consumer in your allied health field. Design or identify an evaluation tool that you can use to evaluate resources and evaluate each of the resources you list. Be sure to include print, electronic, Internet, World Wide Web and other resources as appropriate. Submit the electronic database and include that in the e-portfolio.
- Utilize a CPR or EHR in simulated client care using a database, aggregate data and data for policy and decision-making.
- PowerPoint slides presentation of resources.
- Participation in chat sessions and threaded discussions.
- Completion of all assignments.

Failure to do so may result in the loss of points or the lowering of one's grade. If you miss a session, such as chat session, you will be responsible for all the materials and announcements covered during that session. You are expected to do your own work on all assignments.

**Recommended Course Grading (expressed as percentages):**

A	96-100	B+	87-89	C+	77-79	D+	67-69
A-	90- 95	B	84-86	C	74-76	D	64-66
		B-	80-83	C-	70-73	D-	60-63

**Grading Criteria**

Participation in four chats (2.5% for each)	10%
Participation in four threaded discussions (2.5% for each)	10%
Two Case Studies (10% for each)	20%
Eight Written Assignments (5% for each)	40%
Final (e-Portfolio; Saturday, January 31)	20% (Ppt, 5%; Doc, 15%)

For more info, see the course calendar.

- ❑ Students are required to attend and participate in **one Chat Session each week for a total of four Sessions**. Student who misses a Chat Session must listen to the recording and summarize the discussion, though fewer points will be available for such participation.
- ❑ Chat Sessions will be held on **Thursday evenings each week from 6:30 – 8:00 PM (PST, San Diego time) unless announced otherwise**.
- ❑ **Students are required to participate in all Weekly topics posting a minimum of one message every 2-3 days: Sunday-Tuesday, Wednesday-Thursday and Friday-Saturday. Continuous reading and contributions to the discussion are required rather than last minute comments at the end of the week.**

**Definition of Grades (also see the University catalog):**

- A Outstanding Achievement, Significantly Exceeds Standards
- B Commendable Achievement, Exceeds Standards
- C Acceptable Achievement, Meets Standards
- D Marginal Achievement, Below Standards
- F Failing
- I Incomplete: A grade given when a student who has completed at least two-thirds of the course class sessions and is unable to complete the requirements of the course because of uncontrollable and unforeseen circumstances. Students must communicate these circumstances (preferably in writing) to the instructor prior to the final day of the course. If an instructor decides that an “Incomplete” is warranted, they provide the student with the conditions for removal of the

“Incomplete” in writing and place a copy on file with the Office of the Registrar. The file copy remains in place until the “Incomplete” is removed or the time limit for removal has passed. An “Incomplete” is not assigned when the only way the student could make up the work would be to attend a major portion of the class when it is offered again. Students must resolve “Incompletes” no later than the second complete quarter following the course completion date. Students can be required to remove an “Incomplete” in a shorter period at the discretion of the instructor. An “I” that is not removed within the stipulated time becomes an “F.” No grade points are assigned. The “F” will be calculated in the grade point average.

Plus/Minus Grading: National University utilizes a plus/minus grading system. The grades of A+, F+ and F- are not issued.

**Diversity:**

Learning to work with and value diversity is essential in every business program. Students are required to act respectfully toward other students and instructors throughout the course. Students are also expected to exhibit an appreciation for multinational and gender diversity in the classroom and develop management skills and judgment appropriate to such diversity in the workplace.

**Ethics:**

Ethical behavior in the classroom is required of every student. Students are also expected to identify ethical policies and practices relevant to course topics.

**Writing Across the Curriculum:**

Students are expected to demonstrate writing skills in describing, analyzing and evaluating ideas and experiences. Written reports and research papers must follow specific standards regarding citations of an author’s work within the text and references at the end of the paper. Students are encouraged to use the services of the University’s Writing Center when preparing materials.

**Plagiarism:**

Plagiarism is the presentation of someone else’s ideas or work as one’s own. Students found plagiarizing are subject to the penalties outlined in the Policies and Procedures section of the University Catalog, which may include a failing grade for the work in question or for the entire course.

**Attendance Procedures:**

Students are expected to attend all class sessions. An absence is assessed each time a student is not in attendance during a regularly scheduled class period, whether or not it is an excused absence. An instructor may withdraw a student from class prior to the seventh session in undergraduate courses, and prior to the sixth session in graduate courses if there are more than two unexcused absences. Students who have more than three absences, excused or unexcused, cannot be given a satisfactory grade.

**Course Schedule:**

**Week 1**

- ❑ **Chapters 1-5**
  - Chapter 1: Overview of Medical Informatics
  - Chapter 2: Electronic Health Records
  - Chapter 3: Interoperability
  - Chapter 4: Patient Informatics
  - Chapter 5: Online Medical Resources
- ❑ Homework Assignments - see the 'Assignment' section for the Homework
- ❑ Chat Session
- ❑ Week One Threaded Discussion

**Week 2**

- ❑ **Chapters 6-10**
  - Chapter 6: Search Engines
  - Chapter 7: Mobile technology
  - Chapter 8: Evidence Based Medicine
  - Chapter 9: Clinical Practice Guidelines
  - Chapter 10: Disease Management and Disease Registries
- ❑ Homework Assignments - see the 'Assignment' section for the Homework
- ❑ Case Study - Review the PowerPoint slides on the 'The Illinois Health Network' by Todd W. Hart (file name: ILhealthNetwork.pdf) and write your comments in 3 -4 pages (Times New Roman with 11 font size and 1.5 line space). Name this doc file appropriately (e.g., CaseStudy1.doc) and submit that in the drop box (under "Drop Box").
- ❑ Chat Session
- ❑ Week Two Threaded Discussions

**Week 3**

- ❑ **Chapters 11-15**
  - Chapter 11: Pay for Performance
  - Chapter 12: Patient Safety
  - Chapter 13: E-Prescribing
  - Chapter 14: Telemedicine
  - Chapter 15: Picture Archiving and Communication Systems
- ❑ Homework Assignments - see the 'Assignment' section for the Homework
- ❑ Case Study - Review the PowerPoint slides on the 'The Florida Health Network Promoting Telehealth Services to Rural Hospitals in Florida's Panhandle' by Christopher B. Sullivan (file name: FLhealthNetwork.pdf) and write your comments in 3 -4 pages (Times New Roman with 11 font size and 1.5 line space). Name this doc file appropriately (e.g., CaseStudy2.doc) and submit that in the drop box (under "Drop Box").
- ❑ Chat Session

- ❑ Week Three Threaded Discussions

#### **Week 4**

- ❑ **Chapters 16-19**
  - Chapter 16: Bioinformatics
  - Chapter 17: Public Health Informatics
  - Chapter 18: E-Research
  - Chapter 19: Emerging Trends
- ❑ Homework Assignments – see the ‘Assignment’ section for the Homework
- ❑ Chat Session
- ❑ Week Four Threaded Discussions

Grading of the discussions and written reports will be based on the following:

- ❑ Describing concepts and ideas is “C” level work.
- ❑ Describing and analyzing concepts and ideas is “B” level work.
- ❑ Describing, analyzing and evaluating concepts and ideas is “A” level work.

#### **Online Communication**

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Communication in this online course will be conducted primarily through the Chat Sessions and Threaded Discussions Boards. Written reports will be submitted through the Dropbox. Current information and directions will be posted in the Announcement section. Limited communication will be conducted through email messages.

#### **Chat Sessions**

- ❑ Conducted once a week on a regular basis. Check the individual chat session for the topic/agenda; the agenda will also be emailed prior to the Chat Session.
- ❑ Chat Session for each week will normally be held on the same day (Thursday) and time, usually in the evening (6:30 PM – 8:00 PM).
- ❑ Chat sessions participation will be graded
- ❑ Students **are required to attend the four scheduled Chat Sessions**
  - Missed Scheduled Chat Sessions can be retrieved from the Archives by reviewing the recording.
- ❑ A summary of the missed discussion with some contribution to the topics can be made and sent to the instructor via the Digital Dropbox for some credit by noon on Saturday of that particular week.
- ❑ Depending upon circumstances and need, additional Chat Sessions may be offered.

- ❑ **No Make-up work is allowed.**

### **Threaded Discussion Board**

- ❑ Two to four Threaded Discussion Topics will be held each week in the Discussion Board and will be posted.
- ❑ Topics will focus on the assigned reading materials
- ❑ Topics for each Threaded Discussion will be identified in each Week's course content.

***Unless announced by the prior notice by the instructor (AKD) for any change or revision, these following topics will be discussed:***

#### **Threaded Discussion for week 1:**

Participate in the following threaded discussions:

1. The medical cost has escalated to a point where not every individual can afford the premium. How informatics technology can play an important role to reduce the cost of operation?
2. Are you using any Electronic Health Record system in your workplace? If so, what are the advantages or disadvantages of that system?
3. How the barriers to Health Information Technology adoption can be overcome?
4. Are you using HL7 in your workplace? If not, why?

#### **Threaded Discussion for week 2:**

Participate in the following threaded discussions:

1. How the online information resources are changing the face of the traditional library resources?
2. Is *Google* search is enough to obtain medical/healthcare informatics? If not, why?
3. What kind of mobile technology can be used in Healthcare Management and what are the barriers?
4. Most clinicians are too busy to perform literature searches for the best evidence. How that can be solved? How that is solved in your workplace?

#### **Threaded Discussion for week 3:**

Participate in the following threaded discussions:

1. Do you have any technology based Clinical Practice Guidelines in your workplace? If so, how are these practiced?
2. Do you have any Disease Management Informatics Program used in your workplace? If not, why?
3. What kind of 'Pay for Performance' informatics system is used in your workplace/state? What are the advantages/disadvantages?
4. How the telemedicine can be used in Healthcare Management and what are the barriers?

#### **Threaded Discussion for week 4:**

Participate in the following threaded discussions:

1. How the emerging trends of technologies can be beneficial in Healthcare Management?
2. What can be learnt from the slide presentation of Gerard Comyn on the healthcare system in Europe and its utilization of ICT?

3. Do you think whatever the US Federal Government doing for patient safety is adequate? What can be done to improve?
4. How the electronic prescription system can be useful for patient safety?

#### Written Papers/Reports

- ❑ Homework assignments are required in this course.
- ❑ You should include text, chat and discussion thread materials, and your own comments.
- ❑ All assignments are posted before the end of that week
- ❑ All reports are to be documented in the APA style [www.apastyle.org](http://www.apastyle.org) (see below for examples)
- ❑ References should be included both within the text and in the list of references at the end of the paper.
- ❑ There are NO group projects, all assignments are individual work

#### References for further reading:

- American Psychological Association (2001). Publication Manual of the American Psychological Association. Washington, DC: American Psychological Association. ISBN: 1-55798-790-2
- Hebda, T., Czar, P., & Mascara, C. (2005). Handbook of Informatics for Nurses & Health Care Professionals. (3<sup>rd</sup> Ed.). Upper Saddle River, N.J., Pearson Prentice Hall. ISBN: 0-13-164008-9
- Public Health Informatics and Information Systems by D.A. Ross, A.R. Hinman, K. Saarlans, and W.H. Foege. Springer; 1 edition (October 16, 2002). ISBN-10: 0387954740; ISBN-13: 978-0387954745.
- Introduction to Clinical Informatics (Health Informatics) by Patrice Degoulet and Marius Fieschi. Springer; 1st ed. 1997. Corr. 2nd printing edition (July 20, 1999). ISBN-10: 0387946411; ISBN-13: 978-0387946412.
- Understanding Medical Information: A User's Guide to Informatics and Decision-Making by Theresa J. Jordan. McGraw-Hill Medical; 1 edition (September 13, 2001). ISBN-10: 0838592724; ISBN-13: 978-0838592724.
- Strategic Information Management in Hospitals: An Introduction to Hospital Information Systems (Health Informatics) by Reinhold Haux, A. Winter, Elske Ammenwerth, and Birgit Brigl (Hardcover - April 7, 2004). Publisher: Springer; ISBN-10: 0387403566; ISBN-13: 978-0387403564.
- Clinical Decision Support Systems: Theory and Practice (Health Informatics) by Eta S. Berner. Publisher: Springer; 2nd ed. edition (November 14, 2006). ISBN-10: 0387339140; ISBN-13: 978-0387339146.

## **Bibliography/Webliography**

Abdelhak, M. et al. (2001). Health Information: Management of a strategic resource. Saunders (2<sup>nd</sup> Edition), Philadelphia, PA.

Baldwin, F.D. (2002). Making do with less. Healthcare Informatics, 19(3), 37.

Ball, M.J., and Hannah, K.J. (2002). IT, patient safety and quality care. Journal of Healthcare Information Management, 16(1), 28-33.

Bard, M. (2002). E-prescribing cuts costs and reduces medical errors. Managed Healthcare Executive, 12(5), 46.

Kavaler, F. and Spiegel, A.D. (2003). Risk Management in health care institutions. Jones and Bartlett Publishers (2<sup>nd</sup> Ed.), Boston, MA.

Kepler, K.E. and Urbanski, C.J. (2003). Personal digital assistant applications for the healthcare provider. The Annals of Pharmacotherapy, 37(2), 287-296.

Marietti, C. (2004). Health care transformation via infrastructure. Healthcare Informatics, 21(2), 44-50.

Mendoza, E. (2003). Security considerations when choosing an EMR system. Health Management Technology, 24(10), 48.

Agency for Healthcare Quality and Research, <http://www.ahrq.gov>

American Academy of Family Physicians. <http://www.aafp.org> (Go to PDA Center)

Center for Telemedicine Law (CTL), <http://www.ctl.org>

Coalition for Healthcare e-Standards (Internet, e-commerce), <http://www.chestandards.org>

Connecting for Health – Markle Foundation [information infrastructure, standards, data security, electronic health record]<http://connectingforhealth.org>

Council for Responsible Telemedicine (CRT) <http://www.councilforresponsibletelemedicine.org>

Disease Management Association of America (DMAA), <http://www.dmaa.org>

EHR Collaborative [electronic health record standards, information systems, medical records], <http://www.ehrcollaborative.org>

eHealth Initiative (eHI)[internet, information technology], <http://www.ehealthinitiative.org>

eHealth Institute [internet; information technology], <http://www.ehealthinstitute.org>

Epocrates, <http://www.epocrates.com>

Electronic Healthcare Network Accreditation (EHNAC)[third-party administrators, internet, value added networks, transactions/claims processing, provider management organizations, security], <http://www.ehnac.org>

Health Care Resource, <http://www.healthypalmpilot.com>

Health Technology Center (HealthTech)[emerging technologies, internet, e-health],  
<http://www.healthtechcenter.org>

Healthcare Information and Management Systems Society (HIMSS)[incorporates Center for  
Healthcare Information Management (CHIM)], <http://www.himss.org>

International Society of Technology Assessment in Health Care (ISTAHC), <http://www.istahc.org>

Internet Healthcare Coalition (IHC)[quality, ethics], <http://www.ihc.net>

Institute of Medicine, <http://www.nas.edu/iom>

Joint Commission on Accreditation of Healthcare Organizations (JCAHO), <http://www.jcaho.org>

Mobile Healthcare Alliance (MoHCA)[wireless communication/computing],  
<http://www.mohca.org>

PDAMD, <http://www.pdamd.com>

InternetWeek (<http://www.internetwk.com/>)

InfoWorld (<http://www.infoworld.com>)

Network Computing (<http://www.nwc.com/>)

Data Communications (<http://www.data.com/>)

InformationWeek (<http://www.iweek.com/>)

Planet IT (<http://www.planetit.com/>)

### **National University Services:**

National University provides all students with facilities to assist them in the completion of their course work. In particular the Writing Center and the NU Library provides access to materials and services in the area of academic writing, research and information literacy.

### **Library Electronic Resources:**

The NU Library System (NULS) supports academic rigor by providing access to scholarly books, journals, e-books, and databases of all text articles from scholarly journals. Library books and journal articles can be shipped to online students. Librarians are available to assist students at the Spectrum Library in San Diego, at regional Library Information Centers (LIC), and online at: <http://www.nu.edu/library> and click on "Electronic Resources".

### **Writing Center**

Assistance in meeting the written requirements for the course is available from the on-site and on-line Writing Center. Student may submit drafts of papers and outlines to the writing assistants and meet with them to discuss strategies for improving their papers. More information is available from its web page: (<http://www.nu.edu/academics/StudentServices/WritingCenter.html>).

## APA Reference Guide

This is not a sample reference list. A reference list should be alphabetized.

### Books

- Encyclopedia Entry: Bergman, P.G. (1993). Relativity. In *The New Encyclopedia Britannica* (Vol. 26, pp. 501 – 508). Chicago: Encyclopedia Britannica.
- Book: Beck, C.A.J., & Sales, B.D. (2001). *Family mediations: Facts, myths, and future prospects*. Washington, DC: American Psychological Association.
- Book (no author): Merriam-Webster's Collegiate Dictionary (10<sup>th</sup> ed.). (1993). Springfield, MA: Merriam-Webster.
- Edited Book: Gibbs, J. T., & Huang, L.N. (Eds.). (1991). *Children of color: Interventions with minorities*. San Francisco: Jossey-Bass.
- Chapter in an edited Book: Bjork, R.A. (1989). Retrieval inhibitions. In H. Roediger III & F.I.M. Craik (Eds.), *Varieties of mind* (pp. 309-330). Hillsdale, NJ: Erlbaum.
- Citation of a work discussed in a secondary source: Coltheart, M., Curtis, B., & Atkins, P. (1993). Models of reading aloud. *Psychological Review*, 100, 589-608.
- Legal case: Lessard v. Schmidt, 349 F. Supp. 1078 (E.D. Wis. 1972).
- ### Periodical Articles
- Magazine: Kandel, E.R., & Squire, L.R. (2000, November 10). Neuroscience: Breaking down scientific barriers. *Science*, 290, 1113-1120.
- Journal (paginated by issue): Klimoski, R. (1993). The ADA and the hiring process. *Consulting Psychology Journal: Practice and Research*, 45 (2), 10-36.
- Journal (continuous pagination): Beker  
Ian, D.A. (1993). Searching for the typical eyewitness. *American Psychologist*, 48, 574-576.
- Newspaper: Davis, J. (1993, July 15). Drug cuts heart failure risk. *New York Times*. p. A12.
- ERIC Document: Mead, J.V. (1992). Looking at the old photographs: Investigating tales (Report No. NCRTL-RR-92-4). East Lansing, MI: National Center for Research on Teaching

Learning. (ERIC Document Reproduction Service No. ED 346082)

For information on citing electronic sources visit: <http://www.apastyle.org/eleceref.html>

#### Electronic Sources

Multipage document  
Created by a  
private organization

Greater New Milford (CT) Area Healthy Community 2000, Task Force on Teen and Adolescent Issues. (n.d.). Who has time for a family meal? You do! Retrieved October 5, 2000, from <http://www.familymealtime.org>

Chapter/Section in an  
Internet document

Benton Foundation. (1998, July 7). Barriers to closing the gap. In *Losing ground bit by bit: Low-income communities in the information age* (Chap. 2). Retrieved from <http://www.benton.org/Library/Low-Income/two.html>

Stand-alone document,  
No author, no date

GVU's 8<sup>th</sup> WWW user survey. (n.d.). Retrieved August 8, 2000, from [http://www.cc.gatech.edu/gvu/user\\_surveys/survey-1997-10](http://www.cc.gatech.edu/gvu/user_surveys/survey-1997-10)

Message posted to a  
Discussion group

Simons, D.J. (2000, July 14). New resources for visual cognition [Msg 31]. Message posted to <http://groups.yahoo.com/group/visualcognition/message/31>

Electronic copy of a  
Journal article from a  
Database

Borman, W.C., Hanson, M.A., Oppler, S.H., Pulakos, E.D., & White, L.A. (1993). Role of early supervisory experience in supervisor performance. *Journal of Applied Psychology, 78*, 443-449. Retrieved October 23, 2000, from PsycARTICLES database.

Internet articles based  
On a print source

VandenBos, G., Knapp, S., & Doe, J. (2001). Role of reference elements in the selection of resources by psychology undergraduates [Electronic version]. *Journal of Bibliographic Research, 5*, 117-123.

Daily newspaper article  
Available by search

Hilts, P.J. (1999, February 16). In forecasting their emotions, most people flunk out. *New York Times*. Retrieved November 21, 2000, from <http://www.nytimes.com>

#### Electronic Books

(e-books)

Rothman, R. (1999). Testing, teaching, and learning.  
Retrieved August 30, 2001 from NetLibrary:  
<http://www.netlibrary.com>

For more information, see: Publication Manual of the American Psychological Association (5<sup>th</sup> ed.). (2001). Washington, DC: American Psychological Association. [Reference BF 76.7 P82 2001]