I. Catalog Description
Evaluation of concepts, analysis and design of management information systems; management decision models, and strategies for implementing system changes. Letter grade only (A-F). Pre-requisite/Co-requisite: HCA 402.

II. Learning Objectives, Domain and Competencies
Background and overview of the analysis, design, evaluation, selection, installation, use, and management of information systems in health care settings. Review of the information management function and the value of information. Explore the role of information technology in the provision of high quality care and management decision making. Discuss topics on computer hardware, software, networking, and telecommunications sufficient for understanding of concepts and relevant to health care managers and staff.

The class consists of lectures, discussions of reading material and associated questions, case studies, and contemporary topics in health care information management.

Student participation and regular class attendance are essential for course success.

Each learning objective is linked to a domain and a competency as listed in the Health Leadership Alliance directory: http://www.healthcareleadershipalliance.org/directory.htm.
<table>
<thead>
<tr>
<th>Learning Objective - At the conclusion of this course, the student will be able to:</th>
<th>Domain</th>
<th>Competency</th>
<th>Activity (A1), Assignment (A2) or Assessment (A3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate an understanding of computer and computer related terminology.</td>
<td>5</td>
<td>Role and function of information technology in operations</td>
<td>A2, A3</td>
</tr>
<tr>
<td>2. Demonstrate an understanding of hardware and software.</td>
<td>5</td>
<td>Information Technology (e.g: e-commerce; Internet; Intranet)</td>
<td>A2, A3</td>
</tr>
<tr>
<td>3. Analyze healthcare data using MS Excel and MS Access.</td>
<td>5</td>
<td>Data analysis including manipulation, understanding of, and ability to explain data</td>
<td>A1, A2, A3</td>
</tr>
<tr>
<td>4. Analyze the nature of information needs in the organization.</td>
<td>5</td>
<td>Role and function of information technology in operations</td>
<td>A2, A3</td>
</tr>
<tr>
<td>5. Demonstrate understanding of relational database, data warehouse and data mart concepts. Understand the importance of data standards.</td>
<td>5</td>
<td>Principles of database and file management Role of data standards in the health care environment.</td>
<td>A2, A3</td>
</tr>
<tr>
<td>6. Demonstrate an understanding of Electronic Medical Records</td>
<td>5</td>
<td>Physician practice management IT systems (e.g., billing; referral/authorization; claims processing; electronic medical records; prescription writing; productivity; transcription)-</td>
<td>A2, A3</td>
</tr>
<tr>
<td>7. Demonstrate an understanding of decision support systems and processes</td>
<td>5</td>
<td>Role and function of information technology in operations</td>
<td>A2, A3</td>
</tr>
<tr>
<td>8. Demonstrate understanding of basic statistical data used in healthcare industry</td>
<td>5</td>
<td>Role and function of information technology in operations</td>
<td>A1, A2, A3</td>
</tr>
<tr>
<td>9. Demonstrate an understanding of information security including HIPAA regulation.</td>
<td>5</td>
<td>Privacy, confidentiality and security requirement for information management (e.g., HIPPAA; Medical Records)</td>
<td>A2, A3</td>
</tr>
<tr>
<td>10. Demonstrate an understanding of creating reports with Graphs and charts to present data.</td>
<td>5</td>
<td>Data analysis including manipulation, understanding of, and ability to explain data, turn data into information.</td>
<td>A1, A2, A3</td>
</tr>
</tbody>
</table>
III. Text(s) and other course materials

Primary Textbook:
Health Information: Management of a Strategic Resource 4th Edition by Mervat Abdelhak, Ph.D, RHIA, FAHIMA, Sara Grostick, MA, RHIA, FAHIMA, Mary Alice Hanken, PhD, RHIA, CPRS, Published by Elsevier Saunders, 2012

Required Reading (Articles, ebooks and books):


- Austin, Charles J., Boxerman, Stuart B, Information Systems for Health Services Administration AUHHPA Press/Health Administration Press, 6th

- Macdonald, Ian Burke, Catherine Stewart, Karl, Systems Leadership, Creative Positive Organizations, Part 4, Ashgate Publishing Ltd, 2006 (ebook library)


IV. Assignments

Extra Credit
Extra credit class exercises are based on the previous lecture(s) and readings. Extra credits should be done in class. Students are not eligible to turn in extra credit assignments for the sessions that they have an unexcused absence. If they have an excused absence, they can email the extra credit exercise to the instructor before the class for which they would be absent. The grading is as follows:

- 5 in-class exercise (ICE) are 2% each.
- Should be done in class - no exception except for excused absences
- 8 to 10 correct answers gets the student the full 2% point extra credits.
- 5 to 7 correct answers gets the student partial (1% point) extra credits.
- Less than 5 correct answers gets 0% point extra credits.
Data Project *(Due 12/1 by 11:30 pm)*

Data project is based on the data provided by the instructor in lab sessions. Each student will be randomly assigned a state. Each student should pick a role (such as health care administrator, policy analyst, IT specialist or quality improvement analyst etc.) during the first class meeting. The completed product should utilize the assigned state data and provide recommendations based on the role chosen by the student in the first session of class.

Project should include the following sections. For more information please refer to the project template on Beach Board. Also, more information will be provided in class in the second lab session.

- **Section I: Introduction**
- **Section II: Overall Statistics (includes analysis, tables and graphs)**
  1. ALOS State Statistic vs. National average
  2. Cost per Discharge vs. National average
  3. Cost per Day vs. National average
- **Section III: Top 5 DRGs by Discharges (includes analysis, tables and graphs)**
  1. Top 5 DRG by Discharge State Statistic
  2. Top 5 DRG by Discharge National Statistic
- **Section IV: Top 5 DRGs by ALOS (includes analysis, tables and graphs)**
  1. Top 5 DRG by ALOS State Statistic
  2. Top 5 DRG by ALOS National Statistic
- **Section V: Conclusion**
  - Summarize findings and add personal interpretation
  - What else would you recommend for further research based on your results?

Grading for the term project is broken down by the following categories:

- Data accuracy (30%)
- Data format (15%)
- Graphs (15%)
- Grammar (15%)
- Analysis (15%)
- Structure (10%)

Any delay in term project submission will result in 10 percentage points per day.
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Deliverable</th>
</tr>
</thead>
</table>
| 1       | 08/25/2014 | • Introductions<br>• Course purpose, outline and structure<br>• Computer history<br>• Health Care Information Infrastructure and Systems | Chapters 1 and 3 Abdelhak, Grostick, and Hanken  
Chapter 7 Abdelhak, Grostick, and Hanken-pp. 264-268  
Macdonald, Ian Burke, Catherine Stewart, Karl ,Systems Leadership, Creative Positive Organizations, Part 4, (ebook library)  
Computer History [http://www.computerhistory.org/timeline/?category=cmpt](http://www.computerhistory.org/timeline/?category=cmpt) |  |
|         | 08/27/2014 |                                                                      |                                                                                             |                                                                            |
| 2       | 09/01/2014 | • Labor Day Holiday<br>• Health Care Data Concepts<br>• Introduction to the Electronic Health Records | Chapter 4 Abdelhak, Grostick, and Hanken  
Chapter 1 pp. 38-40 |  |
|         | 09/03/2014 |                                                                      |                                                                                             |                                                                            |
| 3       | 09/08/2014 | • Computer Files<br>• Databases<br>• Relational Databases<br>• Data Management | Chapter 7 pp. 268-269  
Introduction to Information Technology  
By: ITL Education Solutions Limited  
Publisher: Pearson Education India  
Publication Date: 21-JUL-2011  
Insert Date: 12-AUG-2011  
Chapter 20.5  
Utley Article | ICE #1 based on Session 1 & 2 concepts (2% extra credit) on 09/08/2014 |
<p>|         | 09/10/2014 |                                                                      |                                                                                             |                                                                            |</p>
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Deliverable</th>
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<tbody>
<tr>
<td>4</td>
<td>09/15/14</td>
<td>• Data Management</td>
<td>Chapter 7 Abdelhak, Grostick, and Hanken pp 291-295</td>
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<tr>
<td></td>
<td>09/17/14</td>
<td>• Data Marts</td>
<td>Data Resource Integration: Understanding and Resolving a Disparate Data Resource by Michael Brackett, Chapters 11 and 12.</td>
<td></td>
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<td></td>
<td></td>
<td>• Data Transformation</td>
<td>Clinical Decision Support Systems: State of the Art</td>
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<td>Location: TBD</td>
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<td>5</td>
<td>09/22/14</td>
<td>• Data Standards</td>
<td>Chapter 6 Abdelhak, Grostick, and Hanken</td>
<td>ICE #2 based on Session 3 &amp; 4 concepts (2% extra credit) on 09/22/2014</td>
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<tr>
<td></td>
<td>09/24/14</td>
<td>• Understanding Terminologies</td>
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<td>6</td>
<td>09/29/14</td>
<td>• Access Queries</td>
<td>LAB exercises - students to answer key questions by analyzing an Access database, using Access queries.</td>
<td>ICE #3 based on Session 5 &amp; 6 concepts (2% extra credit) on 10/08/2014</td>
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<td></td>
<td>10/01/14</td>
<td>• MS Access Lab Exercise</td>
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<td>Location: TBD</td>
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<td>7</td>
<td>10/06/14</td>
<td>• EMR: Electronic Medical Records</td>
<td>Chapter 5 Abdelhak, Grostick, and Hanken</td>
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<td></td>
<td>10/08/14</td>
<td>• Midterm review</td>
<td>Electronic Medical Records.&quot; <a href="http://www.openclinical.org/emr.htm">Open Clinic</a> 4 Nov. 2006</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>10/13/14</td>
<td>• Mid Term Exam</td>
<td>Exam is in 2 sessions with 25 multiple choices questions during both of the days</td>
<td>ICE #3 based on Session 5 &amp; 6 concepts (2% extra credit) on 10/08/2014</td>
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<tr>
<td>Session</td>
<td>Date</td>
<td>Topic</td>
<td>Reading</td>
<td>Deliverable</td>
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<td>9</td>
<td>10/20/2014</td>
<td>• Utilization Management&lt;br&gt; • Reporting</td>
<td>Chapter 13 Abdelhak, Grostick, and Hanken pp 478-507</td>
<td>What is Care Management?&lt;br&gt; <a href="http://www.rwjf.org/content/dam/farm/reports/issue_briefs/2009/rwjf49853">link</a></td>
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<tr>
<td></td>
<td>10/22/2014</td>
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<td></td>
<td>Hospital Utilization&lt;br&gt; (in non-Federal short-stay hospitals)&lt;br&gt;<a href="http://www.cdc.gov/nchs/fastats/hospital.htm">link</a></td>
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<td>Calculation of the Office of Statewide Health Planning and Development’s (OSHPD) Case Mix Index (CMI)&lt;br&gt;<a href="http://www.oshpd.ca.gov/HID/Products/PatDischargeData/CaseMixIndex/default.asp">link</a></td>
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<td></td>
<td>Managed Care Resources, Inc&lt;br&gt;<a href="http://www.mcres.com/mcrdef.htm">link</a></td>
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<td></td>
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<td></td>
<td>What criteria should we use when screening measures of quality for public reporting?&lt;br&gt;<a href="http://www.ahrq.gov/qual/perfmeasguide/perfmeaspt4a.htm#q22">link</a></td>
</tr>
<tr>
<td>10</td>
<td>10/27/2014</td>
<td>• Performance management&lt;br&gt; • Business application</td>
<td>Chapter 12 Abdelhak, Grostick, and Hanken&lt;br&gt;Chapters 1-2, Provost and Murray, The Health Care Data Guide, (ebook, library)&lt;br&gt;An Environmental Snapshot-- Quality Measurement Enabled by Health IT: Overview, Challenges, and Possibilities&lt;br&gt;<a href="http://healthit.ahrq.gov/portal/server.pt/community/ahrq-funded_projects/654/health_it-enabled_quality_measurement/30886">link</a></td>
<td>ICE #4 based on Session 7 &amp; 9 concepts (2% extra credit) on 10/29/2014</td>
</tr>
<tr>
<td>Session</td>
<td>Date</td>
<td>Topic</td>
<td>Reading</td>
<td>Deliverable</td>
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<td>11/5/2014</td>
<td>• MS Excel – formulas and reporting exercises</td>
<td></td>
<td>LAB exercises: calculating key health care statistics using Excel</td>
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<td></td>
<td></td>
<td>• MS Access Lab Exercise</td>
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<td>• <strong>Location:</strong> TBD</td>
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<tr>
<td>12</td>
<td>11/17/2014</td>
<td>• Outcomes</td>
<td>Chapter 13 Abdelhak, Grostick, and Hanken pp 507-513</td>
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<tr>
<td></td>
<td>11/19/2014</td>
<td>• MS Excel – Graphs and pivot table</td>
<td></td>
<td>LAB exercises: creating graphs and pivot tables</td>
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<tr>
<td></td>
<td></td>
<td>• MS Access Lab Exercise</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• <strong>Location:</strong> TBD</td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td>11/24/2014</td>
<td>• HIPAA and Data Security</td>
<td>Chapter 14 Abdelhak, Grostick, and Hanken pp. 529-543</td>
<td>ICE #5 based on Session 10 &amp; 11 concepts (2% extra credit) on 11/24/2014</td>
</tr>
<tr>
<td>14</td>
<td>12/1/2014</td>
<td>• System Lifecycle and project management</td>
<td>Chapter 8 Abdelhak, Grostick, and Hanken</td>
<td>Term Project due 12/1 by 11:30 pm</td>
</tr>
<tr>
<td></td>
<td>12/3/2014</td>
<td>• Health Informatics Profession</td>
<td>Chapter 2 Abdelhak, Grostick, and Hanken</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12/8/2014</td>
<td>• Final Review</td>
<td>NO ASSIGNMENTS ACCEPTED AFTER THIS DATE</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>12/17/2014</td>
<td>• <strong>Final Exam 2:45-4:45 pm</strong></td>
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</tbody>
</table>
V. Basis for Assigning the Course Grade

<table>
<thead>
<tr>
<th>% of Grade</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% Class</td>
<td>- Attendance (5%)</td>
</tr>
<tr>
<td>Participation and</td>
<td>- Participation in and contribution to class discussion of lecture material, reading assignments, and questions (5%)</td>
</tr>
<tr>
<td>Attendance</td>
<td></td>
</tr>
<tr>
<td>20% Labs</td>
<td>- Lab 1: Introduction to Access tables and queries (0%)</td>
</tr>
<tr>
<td></td>
<td>- Lab 2: calculating statistics from an Access database (10%)</td>
</tr>
<tr>
<td></td>
<td>- Lab 3: using Excel to calculate key healthcare statistics (5%)</td>
</tr>
<tr>
<td></td>
<td>- Lab 4: creating Excel graphs and pivot tables (5%)</td>
</tr>
<tr>
<td>20% Data Project</td>
<td></td>
</tr>
<tr>
<td>50% Examinations</td>
<td>- Mid-term (multiple-choice)—50 questions (25%)</td>
</tr>
<tr>
<td>(multiple choice)</td>
<td>- Final (multiple-choice)—50 questions (25%)</td>
</tr>
<tr>
<td>10% Extra Credit</td>
<td>- 5 ICEs 2% each (10% total)</td>
</tr>
</tbody>
</table>

**Final grade calculation** = ((Participation*5)+(Attendance*5)+(Access lab*10)+(Excel lab1*5)+(Excel lab2*5)+(Data project*20)+(Midterm Exam *25)+(Final Exam*25)/100.

Extra credit points will be added to final exam grade.

**Final Letter Grades Assignment**
- A - 90% and above
- B – 80% - 89%
- C – 70% - 79%
- D – 60 – 69%
- F - <60%

**VI. Withdrawal policy**
Withdrawal after 2nd week and before final 3 weeks “permissible for serious and compelling reasons”. The student will be asked to substantiate their circumstance with official documentation.

**VII. Attendance policy**
Students are expected to attend classes regularly and arrive on time. Students should not miss classes except for valid reasons such as illness, accident or participation in officially approved University activities. Students are expected to notify their instructor in advance when they know they will have an excused absence. It is the student’s responsibility to arrange to make up any work missed. All unexcused absences will result in 1 point reduction in your attendance grade.

**VIII. Students Requiring Accommodations for Special Needs**
It is the student’s responsibility to notify the instructor of the need for accommodations during the first week of class.

**IX. Cheating and plagiarism**

The following is excerpted from the California State University, Long Beach Policy Statement 85-19, dated December 13, 1985.

It is the policy of the faculty and administration to deal effectively with the student who practices cheating or plagiarism. These acts are fundamentally destructive of the process of education and the confident evaluation of a student's mastery over a subject. A University maintains respect and functions successfully within the larger community when its reputation is built on honesty. By the same token, each student benefits in helping to maintain the integrity of the University. This policy, therefore, provides for a variety of faculty actions including those which may lead to the assignment of a failing grade for a course and for administrative actions which may lead to dismissal from the
University. It is the intent to support the traditional values that students are on their honor to perform their academic duties in an ethical manner.

The following definitions of cheating and plagiarism shall apply to all work submitted by a student.

**Plagiarism** is defined as the act of using the ideas or work of another person or persons as if they were one's own, without giving credit to the source. Such an act is not plagiarism if it is ascertained that the ideas were arrived at through independent reasoning or logic or where the thought or idea is common knowledge.

Acknowledge of an original author or source must be made through appropriate references, i.e., quotation marks, footnotes, or commentary. Examples of plagiarism include, but are not limited to, the following: the submission of a work, either in part or in whole, completed by another; failure to give credit for ideas, statements, facts or conclusions with rightfully belong to another; in written work, failure to use quotation marks when quoting directly from another, whether it be a paragraph, a sentence, or even a part thereof; close and lengthy paraphrasing of another writing or paraphrasing should consult the instructor.

Students are cautioned that, in conducting their research, they should prepare their notes by (a) either quoting material exactly (using quotation marks) at the time they take notes from a source; or (b) departing completely from the language used in the source, putting the material into their own words. In this way, when the material is used in the paper or project, the student can avoid plagiarism resulting from verbatim use of notes. Both quoted and paraphrased materials must be given proper citations.

**Cheating** is defined as the act of obtaining or attempting to obtain or aiding another to obtain academic credit for work by the use of any dishonest, deceptive or fraudulent means. Examples of cheating during an examination would include, but not be limited to the following: copying, either in part or in wholes, from another test or examination; discussion of answers or ideas relating to the answers on an examination or test unless such discussion is specifically authorized by the instructor; giving or receiving copies of an exam without the permission of the instructor; using or displaying notes; "cheat sheets," or other information or devices inappropriate to the prescribed test conditions, as when the test of competence includes a test of unassisted recall of information, skill, or procedure; allowing someone other than the officially enrolled student to represent the same. Also included are plagiarism as defined and altering or interfering with the grading procedures.

It is often appropriate for students to study together or to work in teams on projects. However, such students should be careful to avoid use of unauthorized assistance, and to avoid any implication of cheating, by such means as sitting apart from one another in examinations, presenting the work in a manner which clearly indicates the effort of each individual, or such other method as is appropriate to the particular course.

One or more of the following academic actions are available to the faculty member who finds a student has been cheating or plagiarizing.

(a) Review -- no action.
(b) An oral reprimand with emphasis on counseling toward prevention of further occurrences;
(c) A requirement that the work be repeated;
(d) Assignment of a score of zero (0) for the specific demonstration of competence, resulting in the proportional reduction of final course grade;
(e) Assignment of a failing final grade;
(f) Referral to the Office of Judicial Affairs for possible probation, suspension, or expulsion.
XI. Additional information resources
For more information on the university syllabus policy please go to the Faculty Center for Professional Development website at: http://www.csulb.edu/divisions/aa/personnel/fcpd/.

The faculty handbook can also be found online at the following link: http://www.csulb.edu/divisions/aa/personnel/handbook/