



**HPM 341**  
**Information Systems, Technology, and Tools**  
**in Health Services Administration**  
(Credit Hours: 3)  
*Department of Health Policy and Management*  
Gillings School of Global Public Health

Fall 2017 Syllabus

Class Location: McGavran-Greenberg PH-Rm 1304

Meeting Times: Monday 3:35pm – 6:35pm

Instructor:	Franklin Farmer	TA:	Megan Jarrell
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Hours:	By appointment	Hours:	By appointment

## Course Overview

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HPM 341, Computers in Health Care Administration, is designed to enhance students' understanding of information systems and technology in health care specifically with focus on the limitations of such technology. Students will be introduced to MS Excel and MS Access and shown how tools within these programs can help to mitigate some of the limitations discussed, communicate effectively, and store health care information appropriately.

## Learning Objectives and Competencies

	<b>Course Learning Objective</b>	<b>BSPH Program in Health Policy &amp; Management Competencies</b>
	<i>By the time students finish this course, they should be able to...</i>	<i>Through this course, students will further develop the following knowledge, skills, and abilities...</i>
1	Understand and describe health care information systems and technology and the effective use of these systems and technologies.	Health Industry Knowledge Teamwork & Communication Skills Business Skills: Information Management
2	Understand and describe the current limitations of health care systems and	Health Industry Knowledge Teamwork & Communication Skills

	technology specifically from the perspective of the various stakeholders.	Business Systems: Information Management Research, Analysis & Problem Solving Skills
3	Substantially increase productivity in and ability to communicate through MS Excel.	Research, Analysis, and Problem Solving Skills Business Skills: Information Management
4	Learn the use MS Access as tool for health care data manipulation and storage. Specifically with regard to its ability to help mitigate some of the limitations in health information systems in general	Research, Analysis, and Problem Solving Skills Business Skills: Information Management

## Resources

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### *Course Website*

The HPM 341 course website can be accessed on Sakai: <https://www.unc.edu/sakai/>

### *Texts*

Optional:

- Harvey G, "Excel 2013 All-in-One Desk Reference for Dummies," Wiley Publishing, Inc, Hoboken: 2010. ISBN-13: 9781118510100.
- Barrows A, Levine Young M, Taylor A, "Access 2013 All-in-One For Dummies," Wiley Publishing, Inc, Hoboken: 2010. ISBN-13: 9781118510551.

### *Articles*

Articles from recent health policy and management literature will supplement the required readings from the texts. These articles are available at:

<http://eres.hsl.unc.edu/eres/coursepage.aspx?cid=2484>

### *Virtual Lab (especially important for Apple users)*

The PC version of both Excel 2016 and Access 2016 can be run though the UNC Virtual Lab portal, even if utilizing Apple hardware.

<https://virtuallab.unc.edu>

[http://help.unc.edu/help/how-do-i-troubleshoot-in-virtual-lab/#P54\\_3882](http://help.unc.edu/help/how-do-i-troubleshoot-in-virtual-lab/#P54_3882)

## Requirements and Expectations

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Students are required to attend all classes and to complete all exercises, some of which you will be able to complete during the class period. Students may miss one class without penalty regardless of the reason. However, this “pass” does not exempt students from completing an exercise. Class exercises submitted more than one week beyond the time the relevant class was held will not be accepted.

### *Group Presentations*

Group Presentations should focus on how computers or their underlying technology influence the delivery of health care, or how utilization of health care has been affected by consumers’ use of computers. You are encouraged here to think hard about how the advancement of information technology has influenced the provision of health care or the health of a population more generally. You also are encouraged to conduct your presentation as the facilitation of an interactive discussion. Involve the class rather than simply lecture to them. Presentations should last at least 20 minutes but no more than 30 minutes. Grading of group “presentations” will be based primarily on content and the use of presentation technology, as well as technique and the level of class interaction.

### *Weekly Exercises*

Individual Exercises will be assigned throughout the semester and will be due the following class. These exercises are meant to reinforce class instruction and ensure comprehension of subject matter.

### *Attendance and Class Participation*

Participation points are intended as an incentive to promote positive course citizenship, i.e., being an active and positive influence in the class. Participation points will be gained by: students who participate actively in discussion, particularly by offering considered responses to questions that others raise or by raising current issues for discussion, and, to a lesser extent, who raise questions of a general nature; students who carry an equitable share of group work; and students who submit assignments that conform to specification (deadline, file naming, page limits, adherence to instructions, etc.).

Clearly, this is a subjective grade. It employs both a merit and a demerit system. Positive participation points are awarded for positive citizenship. Be the student that you would like your classmates to be and participation points should not be a problem for you.

## Evaluation Method

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### *Grade Components*

<b>Component</b>	<b>% of Grade</b>
Class Participation	20%
Completion of weekly assignments	45%
Group Presentation	35%
<b>TOTAL</b>	<b>100%</b>

### *Grading Scale*

94 or above: A  
90 to 93: A-  
87 to 89: B+  
83 to 86: B  
80 to 82: B-  
77 to 79: C+  
73 to 76: C  
70 to 72: C-  
67 to 69: D+  
63 to 67: D  
60 to 62: D-  
Below 60: E

## **UNC Honor Code**

The principles of academic honesty, integrity, and responsible citizenship govern the performance of all academic work and student conduct at the University as they have during the long life of this institution. Your acceptance of enrollment in the University presupposes a commitment to the principles embodied in the Code of Student Conduct and a respect for this most significant Carolina tradition. Your reward is in the practice of these principles.

Your participation in this course comes with the expectation that your work will be completed in full observance of the Honor Code. Academic dishonesty in any form is unacceptable, because any breach in academic integrity, however small, strikes destructively at the University's life and work.

If you have any questions about your responsibility or the responsibility of faculty members under the Honor Code, please consult with someone in either the Office of the Student Attorney General (966-4084) or the Office of the Dean of Students (966-4042).

Read “The Instrument of Student Judicial Governance” (<http://instrument.unc.edu>).

## **Recognizing, Valuing, and Encouraging Diversity**

The importance of diversity is recognized in the mission statement of HPM. In the classroom, diversity strengthens the products, enriches the learning, and broadens the perspectives of all in the class. Diversity requires an atmosphere of inclusion and tolerance, which oftentimes challenges our own closely-held ideas, as well as our personal comfort zones. The results, however, create a sense of community and promote excellence in the learning environment. This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity.

Diversity includes consideration of: (1) life experiences, including type, variety, uniqueness, duration, personal values, political viewpoints, and intensity; and (2) factors related to “diversity of presence,” including, among others, age, economic circumstances, ethnic identification, family educational attainment, disability, gender, geographic origin, maturity, race, religion, sexual orientation, social position, and veteran status.

## **Course Evaluation**

HPM participates in the UNC-CH’s online course evaluation system, enabled at the end of each semester by DigitalMeasures. Your responses will be anonymous, with feedback provided in the aggregate. Open-ended comments will be shared with instructors, but not identified with individual students. Your participation in course evaluation is an expectation, since providing constructive feedback is a professional obligation. Feedback is critical, moreover, to improving the quality of our courses, as well as for instructor assessment.



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**CLASS SCHEDULE**

<b>Date:</b>	8/28/17
<b>Article Topic:</b>	None
<b>IT Tool Topic:</b>	<b>Introduction, Course Overview, Excel Overview</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Identify course resources, including the optional textbook, Virtual Lab (important for Apple users) and course Sakai site</li> <li>• Understand course assignments and what is expected of students</li> </ul>
Assignment Due:	None

<b>Date:</b>	9/11/17
<b>Article Topic:</b>	<b>Complementary roles of the hospital-wide EHR and CDS</b> - Vedvik, Eivind, Aksel H. Tjora, and Arild Faxvaag. "Beyond the EPR: complementary roles of the hospital-wide electronic health record and clinical departmental systems." <i>BMC Medical Informatics and Decision Making</i> 9 (2009): 29. Academic OneFile. Web. 9 July 2014.
<b>IT Tool Topic:</b>	<b>MS Excel Formatting</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the interplay between Clinical Dept Systems and Electronic Health Records and the substantial barriers created when not properly aligned</li> <li>• Demonstrate proficiency in Excel formatting with specific regard to naming cells, adjusting rows, cutting, pasting, inserting cell comments, inserting pictures, wrapping, merging, adjusting cell data type</li> <li>• Understand group project requirements</li> </ul>
Assignment Due:	None

<b>Date:</b>	<b>9/18/17</b>
<b>Article Topic:</b>	<b>Telemedicine</b> - Wootton, R., Vladzmyrskyy, A., Zolfo, M., & Bonnardot, L. (2011). Experience with low-cost telemedicine in three different settings. Recommendations based on a proposed framework for network performance evaluation. <i>Global Health Action</i> , 4.
<b>IT Tool Topic:</b>	<b>MS Excel Formulas</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the emerging role of telemedicine taking into account stakeholder concerns about delivery, efficacy and billing</li> <li>• Demonstrate proficiency in Excel formulas with specific regard to auto sum, date/ time, if then, math, stat, and financial formulas</li> </ul>
Assignment Due:	Excel Exercise 1

<b>Date:</b>	<b>9/25/17</b>
<b>Article Topic:</b>	<b>The Electronic Physician</b> - Shinal, John. "Future of Medical Work: The Computer Will See You Now." <i>USA Today</i> . USA Today, 04 June 2014. Web. 02 Sept. 2014.
<b>IT Tool Topic:</b>	<b>MS Excel Charts, Graphs, and Printing</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the impact that supercomputers such as IBMs Watson may play in the future delivery of care</li> <li>• Demonstrate proficiency in Excel charts, graphs and printing with specific regard to choosing the correct chart type, modifying charts, printing charts and spreadsheets</li> </ul>
Assignment Due:	Excel Exercise 2

<b>Date:</b>	<b>10/2/17</b>
<b>Article Topic:</b>	<b>Websites that Offer Care Over the Internet</b> - DeJong C, Santa J, Dudley R. Websites That Offer Care Over the Internet: Is There an Access Quality Tradeoff?. <i>JAMA</i> . 2014;311(13):1287-1288.
<b>IT Tool Topic:</b>	<b>MS Excel Pivot Tables; MS Access Introduction</b>
Learning	<ul style="list-style-type: none"> <li>• Understand the value and challenges of offering care to patients over the web</li> </ul>

Objectives:	<ul style="list-style-type: none"> <li>• Demonstrate proficiency in the use of Excel pivot tables</li> <li>• Understand the general high-level functionality of Access</li> </ul>
Assignment Due:	Excel Exercise 3

<b>Date:</b>	<b>10/9/17</b>
<b>Topic:</b>	<b>Group Presentations</b>
Assignment Due:	Excel Exercise 4

<b>Date:</b>	<b>10/16/17</b>
<b>Topic:</b>	<b>Group Presentations</b>

<b>Date:</b>	<b>10/23/17</b>
<b>Article Topic:</b>	<b>Electronic Patient Portals</b> - Goldzweig, C. L., Orshansky, G., Paige, N. M., Towfigh, A. A., Haggstrom, D. A., Miake-Lye, I., Shekelle, P. G. (2013). Electronic patient portals: evidence on health outcomes, satisfaction, efficiency, and attitudes: a systematic review. <i>Annals of Internal Medicine</i> , 159(10), 677–87
<b>IT Tool Topic:</b>	<b>MS Access Database Design and Maintenance</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the growing trend of web portals and how they are being utilized by the health care community to improve communication with providers and empower patients to help manage their own care</li> <li>• Demonstrate proficiency in Access database design and maintenance</li> </ul>
Assignment Due:	None

<b>Date:</b>	<b>10/30/17</b>
<b>Article Topic:</b>	<b>Big Data - Big Data in Healthcare Hype and Hope</b> by Feldman, Martin and Skotnes (pages 1-17) <a href="http://www.west-info.eu/files/big-data-in-healthcare.pdf">http://www.west-info.eu/files/big-data-in-healthcare.pdf</a>
<b>IT Tool Topic:</b>	<b>MS Access Forms</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the role and substantial impact of big data as it pertains to health care</li> <li>• Demonstrate proficiency in the general creation and use of Access queries</li> </ul>
Assignment Due:	Access Exercise 1



<b>Date:</b>	<b>11/6/17</b>
<b>Article Topic:</b>	<b>None</b>
<b>IT Tool Topic:</b>	<b>MS Access Queries</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the utility of creating Access forms in a way that eases data entry and diminishes the possibility of input errors</li> </ul>
Assignment Due:	Access Exercise 2

<b>Date:</b>	<b>11/13/17</b>
<b>Article Topic:</b>	<b>EHR- Top 10 HER IT Mistakes, and How to Avoid Them</b> <a href="http://www.medpagetoday.com/Columns/PracticePointers/38504">http://www.medpagetoday.com/Columns/PracticePointers/38504</a> ; Electronic Medical Records Not Seen As a Cure-all <a href="http://www.washingtonpost.com/wp-dyn/content/article/2009/10/24/AR2009102400967.html">http://www.washingtonpost.com/wp-dyn/content/article/2009/10/24/AR2009102400967.html</a>
<b>IT Tool Topic:</b>	<b>MS Access Advanced Queries</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the impact, challenges, and common pitfalls faced by providers and systems implementing new EMR systems</li> <li>• Demonstrate proficiency in the creation and use of advanced Access queries such as totals queries, update queries, and unique values queries</li> </ul>
Assignment Due:	Access Exercise 3

<b>Date:</b>	<b>11/20/17</b>
<b>Article Topic:</b>	<b>Clinical Decision Support Systems - Murphy, E. V. (2014). Clinical decision support: effectiveness in improving quality processes and clinical outcomes and factors that may influence success. Yale J Biol Med, 87(2), 187–197.</b>
<b>IT Tool Topic:</b>	<b>MS Access Reports</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the inherent value but substantial limitations of Clinical Support Systems from the perspective of various stakeholders</li> <li>• Demonstrate proficiency in the creation, formatting and use of Access reports to display data</li> </ul>
Assignment Due:	Access Exercise 4

<b>Date:</b>	<b>11/27/17</b>
<b>Article Topic:</b>	<b>Data Warehousing-</b> Data Warehousing Fundamentals (pages 1-16, other pages are reference) <a href="http://anuradhasrinivas.files.wordpress.com/2013/03/data-warehousing-fundamentals-by-paulraj-ponniah.pdf">http://anuradhasrinivas.files.wordpress.com/2013/03/data-warehousing-fundamentals-by-paulraj-ponniah.pdf</a>
<b>IT Tool Topic:</b>	<b>MS Access Macros and Buttons</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Understand the benefits as well as the inherent risks of integrating cloud-based technologies with electronic health records</li> <li>• Demonstrate proficiency in the creation and use of Macros and Buttons within Access</li> </ul>
Assignment Due:	Access Exercise 5

<b>Date:</b>	<b>12/4/17</b>
<b>Article Topic:</b>	<b>Information Security -</b> Wang C, Huang DJ. The HIPAA Conundrum in the Era of Mobile Health and Communications. JAMA. 2013;310(11):1121-1122.
<b>IT Tool Topic:</b>	<b>MS Excel and MS Access specific health care applications</b>
Learning Objectives:	<ul style="list-style-type: none"> <li>• Demonstrate specific tools and techniques that are used by Excel and Access users in health care to overcome the challenge of pulling information from multiple systems that are rarely adequately interfaced</li> </ul>
Assignment Due:	Access Exercise 6