PPD 599: DIGITAL HEALTH
2 Units
Fall 2018, Section 51297
Monday, 6:30pm – 8:40pm
Location: VKC 109

Instructors: Pernell Jones & Brian Neman
Office Hours: By Appointment
Contact Info:
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Course Description
This course will focus on the origins and impact of Digital Health on the overall healthcare industry. Beginning in 2011, the healthcare industry has seen significant growth in the sector of "Digital Health". In 2015, Digital Health saw $4.5B in venture funding, up from $4.3B in 2014 and $2.0B in 2013. In the same time period, venture investments for digital health surpassed that for medical devices. Digital Health is defined as the convergence of technology and healthcare - the application of innovative technologies to current issues faced by providers, payers, consumers, and all healthcare stakeholders - effectively achieving the Triple Aim - Increasing Quality and Access while Reducing Cost.

Course Format
The course structure will consist of lectures from guest speakers (industry executives), readings, projects, presentations, and discussions. Given the course format, consisting of industry executive guest lectures, the students are expected to actively engage and participate in discussions. Students will be evaluated on their participation, including the quality and quantity of their contribution to course discussions and written assignments. The course will also include essays and a business planning manuscript.

Course Purpose
1) To introduce, inform, and prepare future healthcare executives and leaders on the subsector of Digital Health - the key players, emerging companies, themes, industry drivers, trends, and opportunities for involvement and innovation;
2) To encourage and inspire thought and action in business development, operations, investment, and entrepreneurship.

Learning Objectives
Upon completing this course, the student will be able to:
● Identify opportunities to utilize Digital Health in their careers and personal lives
● Develop and implement strategies to incorporate Digital Health in the workplace
● Understand the process of creating and monetizing Digital Health companies

Course Notes
Additional resources will be provided on Blackboard, by email, or during class. As with any graduate class, the **schedule may be modified**.

Readings:
The Patient Will See You Now: The Future of Medicine is in Your Hands by Eric Topol
Healthcare Disrupted: Next Generation Business Models and Strategies by Jeff Elton
The Creative Destruction of Medicine by Eric Topol
The Innovator's Prescription: A Disruptive Solution for Health Care by Clayton M. Christensen
Inside the FDA by Fran Hawthorne
The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine's Computer Age by Robert Wachter

PPD 559 COURSE COMPETENCY OUTLINE

	BLOOMS TAXONOMY LEVEL	DATE(S)	METHOD	ASSESSMENT
DOMAIN 1: Knowledge of Health Care Environment				
1.1 Demonstrate knowledge of established and evolving issues in health care, and the ability to apply this knowledge to diverse health organizations	Analyzing	Every Class	Weekly reflections	Weekly reflections
DOMAIN 2: Critical Thinking and Analysis				
2.1 Demonstrate the ability to understand a situation, issue or problem by breaking it into smaller pieces and tracing its implications in a step-by-step manner	Evaluating	Every Class	Weekly reflections, policy discussions	Final Project

2.2 Demonstrate the ability to consider business, demographic, ethno-cultural, political, and regulatory implications of decisions, and to develop strategies that improve the long-term success and viability of the organization	Evaluating	Every Class	Weekly reflections, policy discussions	Mid-Term, Final Project
DOMAIN 3: Business and Management Knowledge				
3.1 Understand and use the formal and informal-decision-making structures in health care organizations and the health care industry, and the ability to analyze and improve an organization's processes	Analyzing	Every Class	Weekly reflections, policy discussions	Mid Term, Final Project
DOMAIN 4: Policy and Community Advocacy				
4.1 Understand the legislative environment and the organizational implications related to health policy at the state, local and federal levels	Analyzing	Every Class	Weekly reflections, policy discussions	Weekly Reflections
4.2 Align one's own and the organization's priorities with the needs and values of the community	Analyzing	Every Class	Weekly reflections, policy discussions	Mid-Term, Final Project
DOMAIN 5: Communication				
5.1 Demonstrates the ability to facilitate a group, and to prepare and present cogent business presentations	Analyzing	Every Class	Policy discussions	Final Project

5.2 Demonstrates the ability to persuade others to support a point of view, position, or recommendation, while assessing and responding to the feelings and concerns of others	Analyzing	Every Class	Weekly reflections, policy discussions	Final Project
DOMAIN 6: Leadership				
6.1 Understands how to establish a compelling organizational vision and goals for an organization	Applying	Every Class	Weekly reflections, policy discussions	Final Project

COURSE REQUIREMENTS

Class Participation and Preparation - 250 Points
All students are expected to prepare for class by completing the assigned reading and sharing their thoughts during class. We want a dynamic discussion! Students will be graded on their contribution and participation throughout the 16-week semester.

Weekly Reflections - 150 Points
All Students are required to complete 10 weekly reflections (15 points each) and comments on course materials and class discussions. Your reflections are your opportunity to think about class reading and discussions and to share with your classmates how those ideas relate to your interests in health care. Each reflection should be at least two paragraphs and no more than one page (no fewer than 200 words). Reflections must include original, thoughtful, clear, substantive comments based on the readings, insights from other courses taken in the program, and from personal experiences. You will be expected to read and prepare a comment on at least one of your classmates' reflections each week. You will post your reflections and comments on the Blackboard Discussion Board for that week's class. To receive credit, you must post reflections before class at 6:30pm (on the day of class). For postings after 6:30pm, students will not receive credit.

Individual Weekly Reflections Grading Rubric (15 points each)			
Component	**Exemplary (***10 points***)**	**Proficient (**7-9 *points***)**	**Complete** *(1-6 points)*
Thoroughness, Clarity and Integration __/ 80%	Student presents a coherent and thorough effort with effective attention paid to integrating weekly course materials. Final product demonstrates careful and insightful consideration of week's topics and detailed reflection on their application.	Student presents a coherent effort with some attention paid to integrating weekly course materials. Final product demonstrates some consideration of week's topics and reflection on their application.	Response does not adequately demonstrate student's understanding of week's topics or thoughtful reflection on their application
Component	**Exemplary (***10 points***)**	**Proficient (***7-9 points***)**	**Complete** *(1-6 points)*
Writing Mechanics, Structure, and Organization __/ 20%	Writing mechanics: No grammar, punctuation, or sentence structure errors observed. Proper citation demonstrated. Structure and Organization: Ideas are clear, well devised, and have solid structure so that readers can readily follow along and understand the content.	Writing mechanics: Minor grammar, punctuation, or sentence structure errors observed (2 or 3 errors). Proper citation demonstrated. Structure and Organization: Content is fairly well organized, does not jump all over the place, and flows in a reasonable manner. Ideas are fairly clear, demonstrate forethought, and are structured in a manner that readers can more or less follow.	Writing mechanics: Many grammar, punctuation, and sentence structure errors are observed (7 or more). Proper citation not demonstrated. Structure and Organization: Content is not well organized or flows poorly. Ideas are unclear, not well devised, or poorly structured.

Mid-Term Project - 300 Points

Each student must conduct an in-person interview with a: 1) Venture Capitalist/Angel Investor (could also be a corporate investor, i.e. Cedars-Sinai's venture arm, Summation Ventures), 2) Healthy System Executive (e.g. Innovation, Partnerships, Strategy), 3) Entrepreneur (has a revenue-generating company). **Prior to conducting the interview,**

you must submit your questions to the professors for review by Week 6. The interview will be no less than 5 pages, covering the range of topics and questions approved. Late papers will be assessed a 10% point reduction.

The goal of the interview is to better understand the roles and responsibilities of each player in the Digital Health space. To better understand their:

- Goals within their organizations
- Outlook on the different players/organizations in the healthcare space
- Challenges they face in their work

The hope is that the student will select an individual that they will continue to connect with long after they have completed the course. The final document must be submitted via turnitin by 10/16 at 6:30pm, and will be 20% of your grade.

End of Year Project - 300 Points (150 Points for Written Case, 150 Points for Presentation)

The end of year project will encourage each student to implement the knowledge they've gained throughout the semester. In connection with the course's objectives, each student will create a written case (5-7 pages) and presentation (15 minutes) for a potential partnership opportunity between their employer (e.g. Cedars, UCLA, Providence, Healthcare Partners), and a Digital Health company. **IMPORTANT**: Submit your presentation online and bring a USB drive copy to class.

A successful case will effectively:

- Communicate a problem their employer faces
- Size of the problem
- How that problem affects operations, profitability
- Communicate the solution to this problem through a partnership with a Digital Health company
- Financial, Operational Impact
- Communicate the implementation of this solution - a step-by-step process
- Economic terms of a 'pilot' project (include a draft Letter of Intent)
- Step-by-Step gantt chart of action items for both teams

An effective presentation will concisely and clearly communicate the main points of the partnership, including the problem, the solution, and the implementation plan.

Class Total - 1,000 Points

Grading Breakdown

Assignment	% of Grade
Class Preparation and Participation	25%
Weekly Reflections	15%
Mid-Term Project (Due on 10/15 at 6:30pm)	30%
End of Year Project	30%
Total	**100%**

Assignment Submission Policy
● All students are required to consult **Blackboard** and email regularly for class updates.
● Submit through **Blackboard**.☐

Note on Use of Laptops and other Electronics

Laptops and other electronic devices are permitted in the classroom subject to the following policies, but not during guest lectures:
● All electronics must be placed in a silent (or vibrate only) mode throughout class sessions.
● Acceptable uses are limited to ones that do not distract others from instruction.

Course Schedule: A Weekly Breakdown

Week 1 08/20	Introduction to Digital Health; Introduction of class members, objectives, syllabus, course requirements *Creative Destruction of Medicine; Chapters 1-3* *The Digital Doctor, Chapter 25* *Healthcare Disrupted, Introduction, Chapter 1,*
Week 2 08/27	Digital Health in Health Systems, Providers; Weekly Reflection Due *Healthcare Disrupted; Chapters 2-3* *Creative Destruction of Medicine; Chapter 2* *The Innovator's Prescription, Chapter 3-4*
Week 3 09/03	Labor Day; No Class
Week 4 09/10	Digital Health for Payors; Weekly Reflection Due *The Innovator's Prescription, Chapter 7*
Week 5	Artificial Intelligence, Big Data; Bio-banking, Weekly Reflection Due

09/17	*The Digital Doctor, Chapter 11*
Week 6 09/24	Digital Therapeutics, Pharmaceuticals; Weekly Reflection Due *The Patient Will See You Now, Chapter 11* *Healthcare Disrupted, Chapter 8* *The Innovator's Prescription, Chapter 5*
Week 7 10/01	Medical Devices and IOT; Weekly Reflection Due *The Innovator's Prescription, Chapter 8, 9*
Week 8 10/08	Telemedicine, Stroke Centers, Population Health; Weekly Reflection Due
Week 9 10/15	Consumer Health/**Mid-Term Project Due**
Week 10 10/22	Clinical Trials; Weekly Reflection Due *Inside the FDA, Chapters 3-6*
Week 11 10/29	HIPAA, Privacy, Security, FDA Pre-Cert Program; Weekly Reflection Due *The Innovator's Prescription, Chapter 11*
Week 12 11/05	Electronic Health Records, Automation, Reporting; Weekly Reflection Due *The Digital Doctor, Chapter 4* *Creative Destruction of Medicine; Chapter 7*
Week 13 11/12	Physician Tools, Decision Support; Weekly Reflection Due *The Digital Doctor, Chapter 9, 10, 12-19*
Week 14 11/19	Healthcare Services/Entrepreneurship *Creative Destruction of Medicine; Chapter 4 & 8*
Week 15 11/26	Presentation: End of year project
Week 16 12/03	Presentation: End of year project
12/12	

Statement on Academic Conduct and Support Systems

Academic Conduct
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Other forms of academic dishonesty are equally unacceptable.

See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems
A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability*

Services and Programs http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.htmlprovides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* *http://emergency.usc.edu/*will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Statement for Students with Disabilities
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. Website for DSP (http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) and contact information: (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu.

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Emergency Preparedness/Course Continuity in a Crisis

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the university's site on Campus Safety and Emergency Preparedness (http://preparedness.usc.edu/).