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Course Syllabus

BIME 535 Spr 2021

BIME 535 Clinical Care and Informatics

Healthcare enterprises are highly complex and interdependent, yet they sadly remain poorly integrated. There remains a disconnect between informatics and the core product of the organization, the clinical care process. Informaticists and clinicians (doctors, nurses and others care providers) often remain strangers, with little mutual understanding of the work of the other. To best train healthcare informaticists for the future, we believe this disconnect must be formally addressed throughout graduate training. **This course is designed as an introduction to the world of clinical care, not only the technical and scientific components, but as well the history, culture, and psychological aspects. We discover through reading, discussion and direct experience the people and processes of clinical care and how they relate (and how they don't!) to informatics in healthcare organizations. About 40% of the course will reflect informatics content.** We apply the UW BHI conceptual models of informatics to the challenges and issues facing practitioners and

consumers of clinical medicine and healthcare today.

> **"Informatics is 10% medicine, 10% technology and 80% sociology"**
>
> *-Attributed to Homer Warner, one of the founders of informatics*

Why take this course

I look forward to learning your objectives in taking this course. I imagine that there are differing reasons: Some might be interested in learning more about healthcare system as part of their biomedical informatics education, some may be taking this course to learn more about healthcare in anticipation of collaborating with clinicians on research projects, some may be considering a career as a clinician and want to learn more about it, and some may be taking his course because it's required. This course will meet the needs of all those interests. **Take this course to understand the world of clinical care and clinical informatics outside of what is shown on Grey's Anatomy and ER; to understand the *real world*, so that you are better prepared in your career in biomedical informatics.**

What we will cover

We'll discuss the healthcare system, emphasizing what is important for those in biomedical informatics to know. We'll describe the professions and roles of people in healthcare: doctors, nurses, residents, fellows, interns, physicians assistants and many others so that you understand what they have in common, how they are different, and how they work with each other. Next, we'll cover the culture in healthcare and the psychological aspects of medicine, the joys, fears and frustrations. We'll learn about **clinical informatics**—what it is, why it is so important for care delivery today, and what challenges are most on the minds of clinicians. **In each of these topics we'll cover what is most relevant to biomedical informatics—about 40% of the content will be devoted to informatics.**

I am a physician and so will focus on the physician perspective because that is what I know best. We'll describe the training of physicians because that is so important in understanding how their perspectives are formed. I will also include the perspective of nurses and other specialties of physicians through invited discussions with them via Zoom.

We'll cover clinical informatics, including how clinicians use and increasingly rely on informatics tools to care for patients, the importance of understanding workflow and team care, and the many unsolved problems such as alert fatigue, documentation burden, shortcuts used in writing notes. We'll focus on what is used today (and what isn't), and where there are opportunities to make improvements.

What you will do during this course

The course is organized into modules, listed below. For each module, we will view a recorded **lecture** (we are still following UW guidance on Covid precautions), you will **read papers and materials** I have selected, we will have an **online discussion**, and we will meet together for **live web conferences.** To give you perspectives different from mine as your course instructor, I will **invite colleagues** from different backgrounds to describe their training and daily experience in their role, so you will have a better understanding of how the life of a surgeon, nurse, ER physician, and psychiatrist are different what is the same. If hospital policies allow by the end of Spring Quarter (at the moment they do not, but this may change), I'll take you on **tours of clinical areas** such as a hospital ward, ICU, the Emergency Department, and other areas of interest. All of this is designed to give you a baseline understanding of what clinical care is like and how people who have devoted their lives to it think and feel.

How the course is organized

We have 10 modules, each a week long.

Module		Example topics
1	Introduction	*Meet each other, understand goals. Orientation to the course*
2	The US healthcare system	*How is healthcare organized and financed and implications for informatics*
3	Clinicians: professions and their roles	*Training, realities of being a doctor, including information overload*
4	Culture of clinical care	*Education/training, joys,, frustrations, burnout and role of EHRs*
5	Health care economics	*Are doctors rich? Are executives? Are EHR vendors?*
6	Medicine and the legal system	*What is it like to be sued? Risks and benefits of EHRs and decision support.*
7	Clinical informatics: Overview	*What exactly is clinical informatics? How is it the same or different?*
8	Clinical informatics: workflow, teams	*Communication, handoffs, characteristics of systems that fit workflow well.*
9	Clinical informatics topics	*Alert fatigue, documentation burden, copy/ paste, systems MDs love*
10	Summary and synthesis	

Readings

There is no required textbook but I will assign readings and web resources to view. Some of these assignments will be in textbooks you can check out or use in digital form from the UW Health Sciences Library.

Expectations and grades

My goal is for you to be immersed in each topic we cover, and to learn a lot each week. If you do so, as measured by the following, you shouldn't have difficulty doing well.

Complete a personal learning plan	10 points
Participate in all online discussions	20 points
Participate in all web conferences (or contact me in advance)	10 points
Prepare a 2 page paper for the Final Project	30 points
Record a 15-20 minute presentation for a Final Project (see below)	30 points

Final Project

In the final project you will select a topic from your personal learning plan, write a short paper on what you have learned then prepare a 15-20 minute presentation in the format used in national scientific meetings. Since we don't have time for you to present it to the class, I would like you to record it using Panopto, Youtube, or any other means, and then upload it so each one in the class can view it. The idea is to focus on the topic you want to learn most about, and teach it to other students.   We can discuss the selection of the topic.