



UNIVERSITY of WASHINGTON

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Course Syllabus

BIME 535 Spr 2023



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.

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

We're back in person! The course is organized into weekly modules, listed below. Each week, during our time together in the classroom I'll give an in-person **talk** we will have **discussion in the classroom**. To get the discussions started, we'll rotate the role of discussion coordinators who will ask 2 or 3 questions on the module topic drawn from the module readings. Before or after the time in the classroom, you will **read papers and materials** I have selected for the module. 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 trauma surgeon, nurse, ER physician, a medical director and psychiatrist are different what is the same. If hospital policies allow by the end of Spring Quarter, 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. If you want a good textbook on clinical informatics, I recommend Key Advances in Clinical Informatics edited by Sheikh.

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	20 points
Participate in discussions	20 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. The presentations will be scored by your fellow students and by me.

Other resources and expectations

Academic integrity

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. The UW School of Medicine is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120) I expect you to know and follow the university's policies on cheating and plagiarism. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

Access and Accommodation

Your experience in this class is important to me. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you have already established accommodations with Disability Resources for

Students (DRS), please activate your accommodations via myDRS so we can discuss how they will be implemented in this course.

If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), contact DRS directly to set up an Access Plan. DRS facilitates the interactive process that establishes reasonable accommodations. Contact DRS at disability.uw.edu.

Diversity, Equity and Inclusion

(Borrowed from the UW School of Public Health)

Diverse backgrounds, embodiments, and experiences are essential to the critical thinking endeavor at the heart of university education. I seek to ensure all students are fully included in each course and I strive to create an environment that reflects community and mutual caring, while we ally with others in combating all forms of social oppression, including those based on age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status.

We have the privilege of learning together and we have a responsibility to engage in dialogue in a way that supports learning for all of us. Here are some practices we as learning community members can strive to use in our learning process:

- My own viewpoint is important—share it. It will enrich others.
- My students' and colleagues' viewpoints are important—listen to them. Do not judge them.
- Extend the same listening respect to others I would wish them to extend to me. We all have room to grow to become better listeners in non-judgmental ways.
- Recognize that I might miss things others see and see things others might miss.
- Raise my views in such a way that I encourage others to raise theirs.
- Inquire into others' views while inviting them to inquire into mine.
- Ask questions when I don't understand something.
- Surface my feelings in such a way that we make it easier for others to surface theirs.
- Test my assumptions about how and why people say or do things.
- Challenge what was said or done, rather than make assumptions about the individual.
- Beware of either-or thinking.
- Be willing to take risks in moving outside my comfort zones.