

A Health Care System Experience Class

ISE 509 4 Units



Health care seeks trained people to solve its unique problems. Job opportunities at hospitals are extensive. Employment has often resulted from this course in the past.

Hospitals are changing more than ever, thanks to the pandemic, new technology, data, and high costs. All sorts of new issues are in their supply chain, clinical workflow, and data analytics, which desperately need your help. ISE 509 will offer a unique and valuable experience. This year, we have some excellent projects available. See below.

Want to see what is really going on in healthcare? You will work with a hospital's doctors and nurses to find solutions to their pressing operational problems.

This spring's 2024 course offers you the opportunity to gain experience in the real environment of the healthcare setting. You will learn and use the latest tools for improving real systems through work with hospitals, clinics, and experts in the field. Available online and in person.

Course Description:

Students will choose their project from several available at the first meeting. Typical past projects include improving patient flow in surgery, reducing emergency department delays, employing new technology, simulation modeling, improving a clinic's productivity, patient safety with AI, applying Lean methods, plans for a command center for a medical campus, data analytics, and more.

We will have guest speakers from various healthcare organizations. The hospitals have developed ways for meaningful work to be done online and are anxious for your help!



Past student projects at: Keck Medical Center, Cedars-Sinai Medical Center, VA Hospitals, Children's Hospital of Los Angeles, LA County Hospitals, safety net neighborhood clinics, Kaiser Hospitals, San Francisco General Hospital, rural hospitals and others.

Available 2024 projects may include:

1. Scheduling – The County DHS system has hundreds of outpatient clinics and 2 million appointments yearly. Scheduling is a challenge, but they often use a simple FCFS approach. Research is available to use data mining of patient data to achieve a more optimal schedule using smarter booking and avoiding costly no-shows based on patient demographics and health info.
2. Senior Living – Residents face depression and clinical problems, which might be avoided with data mining of their activities that are recorded in new data systems. This is to be done in conjunction with the USC Gerontology faculty.
3. Safety Incident – Use text mining using County DHS medical info system data to better manage patient safety.
4. Training at DHS – they are seeking a better system to manage and keep track of the training of their 23,000 employees.
5. Surgery – getting the right materials to the operating room is a daily challenge in a very large hospital like County General. The head of surgery says they need help. Apply supply chain, Lean, optimization, and other tools.
6. Keck hospitals – discussing several data-oriented or technology projects.
7. LA County Medical Center - assist with a project on ED discharge and length of stay reduction. Chart reviews need to be done, a Pareto chart of delays, followed by a summary of possible solutions to the length of stay for discharged ED patients.
8. Plus others