



THE UNIVERSITY OF ARIZONA

Mel & Enid Zuckerman
College of Public Health

**Mel and Enid Zuckerman College of Public Health
University of Arizona**

GHI/EPID 526 Digital Epidemiology

Catalog Description: This course will explore the evolution of epidemiology from its foundations, to the modern era where digital tools, novel data and platforms are integral. We will examine how the Internet, social media, mobile technologies, and other digital data sources are reshaping the way we track, predict, and control disease spread. Students will learn about the role of digital surveillance systems and the impact of real-time data reporting on public health decision-making. (3 units)

Course Topics:

- Infodemiology
- Passive and active crowdsourcing
- System orchestrators
- Social Network Epidemiology
- Digital Contact Tracing
- Building a Digital Epidemiology platform or intervention

Course Objectives: During this course, students will:

- Build a foundation in digital epidemiology concepts
- Gain proficiency in digital disease detection and infodemiology
- Learn about social epidemiology and network analysis
- Develop an understanding of digital epidemiology operations
- Explore the methodologies and technologies involved in digital contact tracing
- Learn how to design and manage digital health cohorts and trials

Learning Outcomes (Competencies Obtained): Upon completion of this course students will be able to:

1. Compare the relative strengths and weaknesses of epidemiological study designs and choose the most appropriate design for specific research questions.
2. Develop and implement a data analysis plan using a data set to select appropriate variables to compare measures of disease frequency and excess risk.
3. Interpret epidemiological analyses in the context of published literature and communicate key findings to various audiences.
4. Critique and synthesize appropriate literature and research findings to address a research question.
5. Develop research questions to address health problems by appraising and identifying gaps in the current scientific literature.
6. Lead group interactions competently, ethically, respectfully and professionally to diverse audiences.
7. Organize and deliver clear presentations of research findings in varying professional formats to diverse audiences.