

OUTCOMES RESEARCH (ORES)

ORES 2320 - Interprofessional Health Outcomes Research

2 Credits

Offered by the Department of Health and Clinical Outcomes Research (HCOR) within the School of Medicine, this course will provide students the skills vital to developing a measurable research question, investigating the current literature, and incorporating a study design that best answers their research questions. Furthermore, this course will encourage students to look at healthcare research from the scope of social determinants and socio-cultural contexts to better understand health disparities and inequities.

Attributes: IPE - Research, UUC:Dignity, Ethics & Just Soc, UUC:Social & Behavioral Sci

ORES 5010 - Introduction to Biostatistics for Health Outcomes

3 Credits

This course is designed to introduce basic principles of descriptive and inferential statistics. The course will cover fundamental concepts and techniques of descriptive and inferential statistics with application to health outcomes research. This course contributes to the First Dimension by preparing students for advanced study in areas related to Outcomes Research and contributes to the Second Dimension by teaching students tools and methods of research.

Attributes: Health & Rehab Sci Research

ORES 5100 - Research Methods in Health & Medicine

3 Credits

This online course is designed to provide an introduction to the techniques, methods, and tools used for research in the health sciences. Students will obtain an understanding of the research process and scientific method, specific study designs, methods for data collection and analysis. This is a very applied and hands-on course and is focused entirely on the unique aspects of research in the health sciences.

This course will utilize Blackboard for all lectures, online discussions, assignment submission, and examinations.

Attributes: Aviation Elective (Graduate), Aviation Research (Graduate), Health & Rehab Sci Research

ORES 5160 - Data Management and Programming in Healthcare

3 Credits

This course provides essential skills for maintaining databases, ensuring data quality, and manipulating data effectively, with a strong focus on practical applications in Python, R, SQL, and cloud computing. Students will engage in hands-on experiences in database design and management, learning to navigate modern data environments relevant to health outcomes research. The course emphasizes the integration of current technologies and best practices in health data management and storage. By fostering proficiency in data tools and methodologies, this course contributes to the development of critical data management skills essential for addressing contemporary challenges in healthcare delivery.

Attributes: MPH-Epidemiology, MPH-Global Health, MPH-Health Management & Policy, Social Work PhD Specilization

ORES 5210 - Foundations of Medical Diagnosis and Treatment

3 Credits

Taught by medical school faculty, this course is an introduction to clinical medicine for graduate students. Basic science concepts include anatomy, physiology, microbiology/hematology, infectious diseases, genetics, immunology, endocrinology and metabolic pathways. Primary organ systems and their associated diseases will also be covered, with special emphasis on their diagnosis and treatment.

ORES 5260 - Pharmacoepidemiology

3 Credits

This course is an introduction to pharmacoepidemiology - the use and effects of drugs in human populations. It provides an overview of the principles of pharmacoepidemiology, sources of pharmacoepidemiology data, and special issues in pharmacoepidemiology methodology. It reviews commonly used study designs, special topics and advanced methodologies for pharmacoepidemiologic studies.

Attributes: MPH-Maternal & Child Health

ORES 5300 - Foundations of Health Outcomes Research

3 Credits

This course introduces students to the methodologies, scientific writing and resources, and data collection processes fundamental to health outcomes research, health measurement, establishing a foundation for evidence-based decision-making in healthcare. Students will explore a range of research designs—learning to select methodologies that best align with specific research objectives and constraints. A major focus will be on ICD codes, clinical terms, data collection techniques, and observational data gathering. Through hands-on projects, students will gain practical experience in designing data collection instruments, evaluating measurement validity and reliability, and addressing challenges like sampling bias and data quality. By the end of the course, students will possess a comprehensive understanding of how to collect, evaluate, and manage data effectively to conduct rigorous outcomes research capable of driving healthcare improvements.

Attributes: Health & Rehab Sci Research, Social Work PhD Specilization

ORES 5320 - Scientific Writing and Communication

3 Credits

The purpose of this course is to take students step-by-step through the process of writing a journal article appropriate for publication in a scientific journal. We will focus on each section of the article for several weeks as students complete assignments related to successfully writing the section and receive feedback on weekly assignments. The last part of the course will focus on taking the research findings presented in the journal article and preparing a poster that could be presented at a research conference. Overall, students will improve their ability to communicate complex research findings in writing to their peers via publication in the peer-reviewed literature and to the broader scientific community through presentation of a poster.

Attributes: MPH-Behavior Sci & Health Equi, MPH-Epidemiology, MPH-Biostatistics

ORES 5400 - Pharmacoeconomics

3 Credits

Pharmacoeconomics is one of the cornerstones of Health Outcomes Research. This course is designed to teach clinicians and new researchers how to incorporate pharmacoeconomics into study design and data analysis. Participants will learn how to collect and calculate the costs of different alternatives, determine the economic impact of clinical outcomes, and how to identify, track and assign costs to different types of health care resources used. This is a required course for the MS in Outcomes Research and Evaluation Sciences but may also be of interest to students in Public Health and Health Administration. This course contributes to the First Dimension by providing students with advanced skills in highly valued research area and contributes to the Second Dimension by developing students' ability to effectively communication complex information.

ORES 5410 - Evaluation Sciences

3 Credits

This course will examine methods for evaluation of health programs in both organizational and community contexts. Topics include formative research, process evaluation, impact assessment, cost analysis, monitoring outcomes, and evaluation implementation. Strengths and weaknesses of evaluation designs will be discussed. This is a required course for the MS in Outcomes Research and Evaluation Sciences Program but may also be of interest to students in Public Health, Health Administration, and Allied Health. This course contributes to the First Dimension by providing students with advanced skills in the evaluation sciences and contributes to the Second Dimension by developing students' ability to effectively communicate complex statistical information.

ORES 5430 - Health Outcomes Measurement

3 Credits

This course is designed to introduce students to the principles of health outcomes measurement. Specifically, students will be introduced to the most common measures seen in health outcomes and health services research as well as measure development and assessment of psychometric properties. Topics will include generic vs. disease specific measures, instrument design, scaling, reliability and validity, addressing measurement error, Classical Test Theory, and Item Response Theory. This course contributes to the First Dimension by providing students with advanced skills in a highly valued research area and contributes to the Second Dimension by developing students' ability to effectively communicate complex statistical information.

Attributes: Health & Rehab Sci Research, MPH-Behavior Sci & Health Equi, MPH-Epidemiology, MPH-Global Health, MPH-Health Management & Policy, MPH-Maternal & Child Health, MPH-Biostatistics, Social Work PhD Specilization

ORES 5440 - Comparative Effectiveness Research

3 Credits

This course is designed to introduce students to the principles of comparative effectiveness research. Specifically, students will be introduced to the concept of comparative effectiveness research, common research methods and statistical analyses, and translation and dissemination. This course contributes to the First Dimension by providing students with advanced skills in a highly valued research area and contributes to the Second Dimension by developing students' ability to effectively communicate complex statistical information.

ORES 5520 - Economic Evaluation in Health Services Research

3 Credits

This course equips students with the analytical approaches used to evaluate the economic dimensions of health services and clinical outcomes research. Emphasis is placed on understanding how costs, resource use, and patient-centered outcomes interact within healthcare delivery systems. Students will engage with methods that quantify the value of interventions, compare alternative care strategies, and assess the consequences of clinical and organizational decisions on both health outcomes and system performance. Through applied exercises, examination of real-world evaluations, and development of structured analyses, learners will gain expertise in cost-effectiveness, cost-utility, and cost-benefit methodologies as they apply to health services research. By the conclusion of the course, students will be able to generate, interpret, and communicate economic evidence that informs quality improvement, population health initiatives, and policy decisions aimed at optimizing patient outcomes and healthcare system impact.

ORES 5530 - Implementation Science in Health Services Research

3 Credits

This course provides students with a comprehensive understanding of implementation science principles within health services research. Students will explore frameworks, strategies, and methodologies for translating evidence-based interventions into clinical and organizational practice. The course emphasizes evaluating the effectiveness, sustainability, and scalability of health interventions while addressing contextual, organizational, and policy-level barriers. Through case studies, hands-on exercises, and critical appraisal of current literature, students will develop the skills necessary to design, implement, and evaluate interventions that improve health outcomes and service delivery.

ORES 5550 - SAS Programming I

1 Credit

In the era of big data and outcomes research, skilled scientists can organize, manipulate, and analyze using many different tools. Programming in SAS is an essential skill. This course introduces the SAS environment and programming language. Students will learn data management, descriptive analysis, and statistical inference testing using a hands-on approach. By the end of the course, students will be able to import, organize, and analyze data as well as interpret the results.

Prerequisite(s): (ORES 5010, BST 5000, or BST 5020)

ORES 5910 - Graduate Internship

1-3 Credits (Repeatable up to 6 credits)

Graduate Internship.

ORES 5970 - Research Topics in Outcomes Research

0-3 Credits (Repeatable for credit)

ORES 5980 - Graduate Independent Study in Outcomes Research

1-3 Credits (Repeatable up to 6 credits)

ORES 6950 - Special Study for Exams

0 Credits (Repeatable for credit)

This Special Study for Exams course indicates that a student will be taking the exams the semester they are registered for.

ORES 6970 - Advanced Research Topics in Outcomes Research

1-3 Credits

ORES 6980 - Graduate Independent Study in Outcomes Research

0-3 Credits

ORES 6990 - Dissertation Research

0-6 Credits (Repeatable for credit)