

# CLINICAL TRANSLATIONAL SCIENCE (CTS)

## **CTS 600 Epi Used in Med Research** **3 Credit hours**

Practical application of epidemiology and biostatistics used in medical research. The course will primarily focus on the design and analysis of translational studies.

**Grade Mode:** Normal Grading Mode

## **CTS 610 Study Design & Stats** **3 Credit hours**

Students will participate in an internship with faculty in providing consultation services in study design and statistics for medical research projects.

**Grade Mode:** Normal Grading Mode

## **CTS 611 Machine Learn Journal Club** **1 Credit hour**

Articles that describe either clinical or translational research along with machine learning techniques will be discussed. Students are expected to read, describe and present at these fourteen, 1 hour weekly sessions.

**Grade Mode:** Credit/No Credit Grade Only

## **CTS 612 Intro Clin Machine Learn** **3 Credit hours**

This course is designed for those who are interested in using machine learning with a focus on translational medical research, which is concerned with bringing bioscience research discoveries into patient care. This course explores the characteristic of its methods, its benefits and limitations. Explain and describe different learning algorithm machine learning journal club is optional.

**Grade Mode:** Normal Grading Mode

## **CTS 614 Online Survey Tools** **3 Credit hours**

This course will introduce Redcap, explore relational DB terms, I2B2, a research data warehouse counting tool, and data manipulation using MS SQL queries, functions, procedures along with C# using LINQ.

**Grade Mode:** Normal Grading Mode

## **CTS 615 Intro Clinical Databases** **3 Credit hours**

This course is an introduction to the concepts of database processing and management especially as it relates to clinical translational research. The focus is to bring bioscience research discoveries into patient care. Primary topics include discussions of major database types, history of databases and database issues, security, database principles, DBMS, RDBMS, SQL queries, Big Data, Marshall Clinical Data Warehouse.

**Grade Mode:** Normal Grading Mode

## **CTS 616 Intro Clinical Program C#** **3 Credit hours**

Course will present C#, a tool that can be used to manipulate data within the Clinical database using LINQ/other to connect the application to the database. The focus is on translational research, which is concerned with bringing bioscience research discoveries into patient care. This course is designed for those who are interested in medical research programming using console/web/smart-phone application technology.

**Grade Mode:** Normal Grading Mode

## **CTS 620 Basic Research Operations** **3 Credit hours**

This course will focus on the operation of clinical research trials, providing an overview of the critical aspects involved in all stages of clinical trials.

**Grade Mode:** Normal Grading Mode

## **CTS 625 Clinical Operations Lab** **1-6 Credit hours**

This course is a hands on experience in Clinical Research trial operation. The course provides an opportunity for students to work with clinical research professionals on FDA-directed clinical trials.

**Pre-req:** CTS 620.

**Grade Mode:** Credit/No Credit Grade Only

## **CTS 628 Intro to Java Cln Prog** **4 Credit hours**

The goal of this course is to expose clinical informatics students to programming in Java for common problem solving tasks. This course will focus on topics related to object-oriented programming with emphasis on object oriented design and style, classes, recursion, searching and sorting, simple data structures, and graphical user interfaces.

**Grade Mode:** Normal Grading Mode

## **CTS 630 Fundamentals of Team Science** **2 Credit hours**

This course offers practical guidance about how best to engage in team science to pursue complex science questions and work effectively with team members.

**Grade Mode:** Normal Grading Mode

## **CTS 632 Qualitative Research** **1 Credit hour**

This course is designed as an introduction to qualitative research methods. It offers various approaches to designing and conducting qualitative research projects in health and health services research. Students will gain hands-on experience in various qualitative methods and analysis techniques while carrying out a research project related to their area of interest.

**Grade Mode:** Credit/No Credit Grade Only

## **CTS 635 Writing and Peer Review** **1 Credit hour**

This course teaches students to become more effective writers of scientific publications.

**Grade Mode:** Normal Grading Mode

## **CTS 637 Introduction to Tableau** **3 Credit hours**

Tableau is a business/clinical intelligence tool that makes it easier to process an ever-increasing stream of clinical information through data visualization, data discovery, visual analytics, dashboards, and visual storytelling. In this course, students will learn the fundamentals of creating interactive visual displays using an industry standard visualization tool using real medical data.

**Grade Mode:** Normal Grading Mode

## **CTS 640 Clinical Trials Journal Club** **1 Credit hour**

This course will be presentations and discussions of the recent literature in the area of clinical trials. Fundamental principles and new discoveries will be emphasized.

**Grade Mode:** Credit/No Credit Grade Only

## **CTS 645 Navigating Health IT** **3 Credit hours**

The quality of healthcare data is critical to clinical & translational research and medical practice. Getting the right data is difficult without a basic understanding of health information systems (HIS) and medical classification standards. This course provides an overview of these HIS and standards in the healthcare industry and enables gathering and use of HIS data effectively.

**Grade Mode:** Normal Grading Mode

## **CTS 650 Rural Clinical Experience** **5 Credit hours**

This course will acquaint students with the issues of rural community health and wellness, which will allow them to participate in clinical studies in a rural environment.

**Pre-req:** CTS 620.

**Grade Mode:** Credit/No Credit Grade Only

**CTS 660 Appalachian Phenotype**

**3 Credit hours**

The course will describe the clinical presentations, epidemiology and molecular phenotype of disorders common in the Appalachian region.

**Grade Mode:** Normal Grading Mode