

Course ID	Course Description	Course Objectives
<p>ESCD 7790 <b>Advanced Research Methods</b></p>	<p>This course presents a number of advanced empirical methodologies widely used in health services research. Practical econometric techniques will be presented for analyzing cross-sectional, time series and pooled cross-sectional and time series data sets. Topics to be covered are: econometric modeling, regression models, linear and non-linear regression, fixed-effect and random effect models, selectivity bias, time series analysis, autocorrelation and heteroscedasticity, dummy variables in regression models, dummy dependent variables, logit and probit models, structural models and problems associated with defining structural models. A number of large scale data sets (such as, health interview surveys, health expenditure surveys, macro level health expenditure data, etc.) to illustrate the use of econometric methods in health services research.</p>	<ol style="list-style-type: none"> <li>1. Examine the importance of combining statistics, economics and health services research methodologies.</li> <li>2. Analyze and apply ordinary least squares on economic and health services data and interpret the empirical results obtained.</li> <li>3. Examine the restrictive nature of OLS assumptions and analyze the problems of using linear models in health services research.</li> <li>4. Analyze and correct empirical models for various problems like multicollinearity, heteroscedasticity, autocorrelation.</li> <li>5. Analyze and apply dummy variables in empirical analysis including the use of dummy variables in the analysis of seasonality, discontinuities in the functional form and shift of the models for policy changes.</li> <li>6. Employ time series modeling to analyze time series health services data.</li> <li>7. Analyze time series data for seasonality, trend and cyclical effects, employ various time series methodology for empirical analysis.</li> <li>8. Employ advanced regression models including logit and tobit models, truncated dependent variable models, instrumental variable approach, fixed effect and random effect models, Heckman's self-selection correction.</li> </ol>