Construction zones are traffic way areas where construction, maintenance or utility work is identified by warning signs, signals and indicators, including those on transport devices that mark the beginning and end of construction zones. Construction zones are among the most dangerous work areas, with workers facing workplace safety challenges that often lead to catastrophic injuries or fatalities.

In addition, daily commuters are also impacted by construction zone detours that affect their safety and daily commute time. These problems represent major challenges to construction planners as they are required to plan vehicle routes around construction zones in such a way that maximizes the safety of construction workers and reduce the impact on daily commuters.

This research aims at developing a framework for optimizing the planning of construction detours. The main objectives of the research are to first identify all the decision variables that affect the planning of construction detours and secondly, implement a model based on shortest path formulation to identify the optimal alternatives for construction detours. The ultimate goal of this research is to offer construction planners with the essential guidelines to improve construction safety and reduce construction zone hazards as well as a robust tool for selecting and optimizing construction zone detours.

Major: Civil Engineering

Educational Career:
Bachelor's of Civil Engineering, BS, 2009, University of Central Florida,

Committee in Charge:
Dr. Ahmed Khalafallah, Chair, CECE
Dr. Essam Radwan, CECE
Dr. Noor Elmitiny, G. F. S.

Approved for distribution by Dr. Ahmed Khalafallah, Committee Chair, on January 1, 2011.

The public is welcome to attend.