

# 2014 CEE Capstone Design Project Topics

## Geological Engineering and Environmental Engineering

Investigating the Influence of Rock Fabric and Operational Parameters on Hydraulic Fracture Propagation  
Tertiary Wastewater Treatment System for the Removal of Pharmaceuticals and Personal Care Products  
The Design of Control Structures on the St. Clair River  
Wastewater Treatment Plant Upgrades to the New Hamburg Wastewater Treatment Plant  
Physical Model of Hydraulic Fracturing in a Fractured Media  
Completions Program Optimization of Central Alberta Glauconite Gas Wells  
Rehabilitation of a Residential Water Distribution System in Ontario  
The Capture and Storage of Flood Waters in Developing Countries  
Small Scale Aquaponics System Design  
Design of Submerged Breakwaters in Negril, Jamaica  
Design of Base Mine Lake Reclamation Strategy  
Fish Ladder Design for the Fish Migration Barrier on Bronte Creek at Progreton Falls  
Source-Separated Urine System for the Hamptons Subdivision  
Assessment and Remedial Activities for Water Supply of Woodstock, Ontario Using a Nitrate Contaminated Aquifer  
1963 Vaiont Dam Retrospective Design Analysis  
University of Waterloo Biogas Facility  
Low-energy Residential Building Simulation and Optimization Project  
Design of a Rockfall Shed for CN Railway at Hell's Gate Fraser Canyon, B.C.  
Fen Design for Reclamation of Oil Sands Mined Land

## Civil Engineering

Sustainability Assessment of the Breithaupt Block  
Rehabilitation of a Corroded Concrete Bridge  
The Region of Waterloo Cycling Master Plan  
Comparison and Analysis of Concrete Membrane Systems II  
22-Storey Condominium Structural Design  
Geothermal Foundation Design Proposal for 70 Fort York Boulevard  
Edmonton Oilers Downtown Arena Project Roof Design  
Aboriginal Affairs and Northern Development Canada for Wastewater Treatment Design for Timmins Area First Nations Communities  
Flood Control of the Estero de Paco  
Sustainable Designs for the Hampton Inn Hotel  
Highway 401 Pavement Rehabilitation from Highway 137 to Mallorytown Road  
Bicycle Storage Facility Design for University of Waterloo Campus  
Cable-Styled Pedestrian Bridge over the Grand River  
Repurposing an Industrial Era Factory into a Contemporary Mixed-Use Residential and Commercial Centre  
Cold-Formed Steel Structural Frame Design of the Waterloo Suites Hotel in Waterloo  
Rammed Earth Residential Housing Unit  
Revitalization of Downtown Kitchener LRT Corridor  
Seismic Retrofitting in Kathmandu, Nepal  
Structural Design of the GRT LRV O&M Facility  
Design of a Broiler Poultry Facility with Integrated Solar Photovoltaics  
Bayview Avenue Storm Sewer Design  
Detailed Design of Stormwater Management and Foundation for Leaside Business Park  
Low-Cost Solar Water Heating System Collector