

# Minor in Underground Construction and Tunneling

## Program Description

Underground Construction and Tunneling is a growing discipline involving knowledge in the disciplines of mining engineering, geological engineering and civil engineering, among others. The departments of Mining Engineering, Geology and Geological Engineering, and Civil and Environmental Engineering offer an interdisciplinary minor that allows students from these departments to take a suite of courses providing them with a basis for work and further study in this field.

The objectives of the minor and ASI are to supplement an engineering background with a formal approach to subsurface engineering that includes site characterization, design and construction of underground infrastructure, including water, storm water, highway or subway tunnels, and subsurface facilities.

## Primary Contact

Mike Mooney  
UCTE Program Director  
<https://ucte.mines.edu/>

## Curriculum

### Underground Construction and Tunneling Engineering Minor and ASI

The Underground Construction and Tunneling Engineering minor consists of a minimum of 18 credits of coursework from the list below. For questions about the minor and to request consideration of additional courses including independent study, students should meet with a UC&T faculty member. The petition process requires one month to complete. See the following page for the Mines' minor requirements.

#### Program Requirements:

#### Required Courses (Minor)

CEEN312	SOIL MECHANICS	3.0
MNGN321	INTRODUCTION TO ROCK MECHANICS	3.0
MNGN404	TUNNELING	3.0

#### Electives (Minor)

CEEN314	STRUCTURAL ANALYSIS	3.0
CEEN320	INTRODUCTION TO CONSTRUCTION ENGINEERING	
CEEN350	CIVIL AND CONSTRUCTION ENGINEERING MATERIALS	3.0
CEEN499	INDEPENDENT STUDY	1-6
GEGN466	GROUNDWATER ENGINEERING	3.0
GEGN468	ENGINEERING GEOLOGY AND GEOTECHNICS	4.0
GEGN473	GEOLOGICAL ENGINEERING SITE INVESTIGATION	3.0

GEGN499	INDEPENDENT STUDY IN ENGINEERING GEOLOGY OR ENGINEERING HYDROGEOLOGY	1-6
MNGN314	UNDERGROUND MINE DESIGN	3.0
MNGN499	INDEPENDENT STUDY	1-6

## Program Director

Michael Mooney, UCTE Director, Grewcock Distinguished Chair

## Department of Civil & Environmental Engineering

Reza Hedayat, Associate Professor

Michael Mooney, Professor

Yangming Shi, Assistant Professor

Lori Tunstall, Assistant Professor

Alexandra Wayllace, Teaching Professor

## Department of Geology & Geological Engineering

Gabriel Walton, Professor

## Department of Mining Engineering

Rennie Kaunda, Associate Professor

Priscilla Nelson, Professor

Jamal Rostami, Professor