

CIVL-551 – Foundations Engineering - Fall 2009

Instructor: Charles J. Roberts, PE, MS
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Office Hours: MW 9:00-10:50 AM, F 9:00-9:50 AM

A structure's foundation is that part of a load bearing system that transfers structural loads (gravity, seismic, and/or wind) to the supporting ground. Foundation engineering is the application of scientific principles and engineering judgment to the design of such a foundation. Engineering judgment is the creative part of this design process.

In this course we will apply the principles and concepts of soil and structural mechanics to the design of the more commonly used foundation types. Reinforced concrete design methods will be applied. Some mathematical procedures are sufficiently complex so that computer analysis will be used.

An introduction to a finite element analysis method will be included.

Each student will design and implement a computer based design and/or analysis program dealing with a selected area of foundation engineering or soil mechanics.

Text: Principles of Foundation Engineering, 6th Ed.,
By Braja M. Das, 2006 ISBN-13: 978-0-495-08246-0

Library Refs: Many books covering a wide variety of foundation types are available in the Meriam Library. Check call numbers near TA 775.

Prerequisites: CIVL-205, CIVL-411, CIVL-415 recommended (concurrent)

Meetings: MWF 11:00-11:50PM, in AGYM 129

No Class Days: Sept. 7 (Labor Day), Nov 11 (Veterans Day), Nov. 23 through 27 (Thanksgiving)
Furlough days - TBA

Final Exam: Monday, December 14, 2009 @ 12:00 1:50 PM, AGYM 129

Grading Basis: There will be 2 one-hour tests and a two-hour final exam. Several design problems will be assigned during the term, including one computer program development project. The final grade will be based on the following proportions:

Assigned problems	30 %
Programming project	20 %
2 midterm tests	30 %
Final exam	20 %