

COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

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CIVE C133/MECHE C180 - ENGINEERING ANALYSIS USING THE FINITE ELEMENT METHOD (3 UNITS)

(Taken from the UC Berkeley Course Guide (<http://guide.berkeley.edu>))

COURSE OVERVIEW

SUMMARY

This is an introductory course on the finite element method and is intended for seniors in engineering and applied science disciplines. The course covers the basic topics of finite element technology, including domain discretization, polynomial interpolation, application of boundary conditions, assembly of global arrays, and solution of the resulting algebraic systems. Finite element formulations for several important field equations are introduced using both direct and integral approaches. Particular emphasis is placed on computer simulation and analysis of realistic engineering problems from solid and fluid mechanics, heat transfer, and electromagnetism. The course uses FEMLAB, a multiphysics MATLAB-based finite element program that possesses a wide array of modeling capabilities and is ideally suited for instruction. Assignments will involve both paper- and computer-based exercises. Computer-based assignments will emphasize the practical aspects of finite element model construction and analysis.

PREREQUISITES

E 7 ([eng7.html](#)) or E 77 or CS 61A; MATH 53 ([math53.html](#)) and MATH 54 ([math54.html](#)), senior status in engineering or applied science

Spring only

WORKLOAD

TIME COMMITMENT

3 hours of lecture and 2 hours of laboratory per week.

UC Berkeley Course Guide (<http://guide.berkeley.edu>)

COLLEGE OF CHEMISTRY PEER SERVICES

Made by Angela Lee, c/o 2019



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