Professor: Webster Johnson, Ph.D.  
O’Connell 304, (530)-898-5579, wrjohnson@csuchico.edu  
Office hours: TBD

Course Description: Numerical analysis, analytical methods, and equation solving techniques for mechanical engineering design. Structured problem formulation, parametric studies, introduction to programming concepts, and optimization for design.

Student Learning Objectives: To learn how to apply a range of numerical methods for solving algebraic and differential equations that occur in engineering analysis and design. To use computer programming concepts and apply them to solve engineering problems. To learn how to use equation-solving software to solve algebraic and differential equations.

Prerequisites: MECH 208 and MATH 260

Bookstore has: LoosePgs: ISBN: 9781260151817  
Hardcover (Used Rental): ISBN 9780073397962  
The 3rd edition is acceptable and available through on-line sites.

Class Meetings: Times: Mon, Wed: 1:00-1:50PM, Friday: 2:00—3:50 PM  
Location: PLMS 205

Course Materials: Required course materials include textbook, engineer’s pad, scientific calculator, and laptop computer. Primary software utilized will be Matlab and Excel. Also recommend Google Drive, Dropbox or a similar means of cloud-based storage of documents. Note that lost, stolen, or corrupted laptops, tablets, or flash drives is not an accepted excuse for missed work.

Blackboard Learn: This course will make use of the Blackboard Learn course management system. All PowerPoint lectures, handouts, homework solutions, grades, announcements, etc. will be available on the course Blackboard page.

Grading: Activities 10%  
Homework 30%  
Tests 60%

Grade Schema:  

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>93.33</td>
<td>89.50</td>
<td>86.67</td>
<td>83.33</td>
<td>79.50</td>
<td>76.67</td>
<td>73.33</td>
<td>69.50</td>
<td>66.67</td>
<td>59.50</td>
<td>59.50</td>
</tr>
</tbody>
</table>

Homework: Throughout the course, homework will be regularly assigned. Unless otherwise specified, the due date for a homework assignment is two lectures hence. For example, homework assigned on Tuesday is due on the following Friday; homework assigned on Thursday is due the next Monday. This algorithm allows for questions on assigned homework during the intermediate class meeting. See the Homework Guidelines document for instructions on formatting requirements.
Activity (In-Class) Assignments: The second hour (roughly) of the Friday class is the “Activity Period” which is devoted to your completing a modest exercise of the current course topic. Students are required to bring fully charged laptops to the class. Students may work independently or in small groups and may ask for help anytime. Assignments are due at the end of class period and are graded Pass/Fail.

Tests: There will be three tests, two during the semester and one during exam week. Tests will be closed book and closed note. A formula sheet will be posted to Blackboard in advance of each exam. Students are strongly encouraged to print the formula sheet and bring it to the exam. Students can add any additional information they wish to the formula sheet. Handheld scientific calculators will be allowed for the exams. Laptops, tablets, smart phones, or other connected devices will not be permitted.

Late Work: Homework is due at the beginning of the designated class period. Assignments will be accepted late the same day with a one letter grade deduction. Homework submitted after the first few minutes of class is considered late and will receive a letter grade deduction (be on time). Assignments will not be accepted after their due date. Homework cannot be submitted in stages (the initial submission is all that is accepted). Assignments are not accepted via email.

Electronic Submission: Some homework and in-class activity assignments require electronic submission to Assignments on Bb Learn. It is the student’s responsibility to upload the correct file(s) to the correct assignment drop-box before the designated deadline.

Email: In the event I need to contact members of the class or make urgent announcements regarding tests, class cancellations, etc., it will be done via your WildcatMail email account. I do not plan to use this method of communication frequently, but I do expect that information sent this way will be received. University policy requires students to monitor their WildcatMail accounts. If you have another preferred email provider, you may set up automatic forwarding of your WildcatMail to that address. Details are available at www.csuchico.edu/itss/.

Academic Integrity: Academic integrity is taken seriously at the University, in this College, and Department, and by your professor. Violations will be referred to student judicial affairs and can result in penalties ranging from failure of the course to long term suspension from the university. See the Policy on Academic Integrity document, https://www.csuchico.edu/pres/em/2018/18-011.shtml, for additional information.

Americans with Disabilities Act: If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Please also contact Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations. ARC is located at Student Services Center 170 and may be reached at 530-898-5959, http://www.csuchico.edu/arc/index.shtml or arcdept@csuchico.edu.