Instructor: Dr. Timothy K. Gates, B209 Engineering, 491-5043, tkg@engr.colostate.edu
Office Hours: 2:30 – 4PM Monday, 8:30 – 9:30AM Wednesday, or by appointment

Teaching Assistants: Ryan Webb (4rwebb@gmail.com) and Alicia Shogbon (Alicia.Shogbon@colostate.edu), A4A Engineering (adjacent to Thermal/Fluids Laboratory), 491-4897
Office Hours: To be announced.

Objectives: The objectives of this course are to develop for the students (1) an understanding of the fundamental physical principles governing the static and dynamic behavior of fluids, (2) analytical and mathematical skills needed to describe and predict fluid behavior, and (3) an ability to apply fundamental principles and skills to the engineering solution of some practical fluid systems problems.

Tentative Schedule:

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics</th>
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<tr>
<td>20 August</td>
<td>Introduction to the Course</td>
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<tr>
<td>20 August – 3 September</td>
<td>Framework for Fluid Analysis; Fluid Properties</td>
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<td>3 – 24 September</td>
<td>Fluid Pressure and Hydrostatics</td>
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<td>24 September – 19 October</td>
<td>Conservation of Mass, Momentum, and Energy in Fluid Flow, Midterm Exam I</td>
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<td>21 October – 2 November</td>
<td>Viscous Flow in Ducts and Conduits</td>
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<td>5 – 16 November</td>
<td>Midterm Exam II; Flow Over Immersed Bodies</td>
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<td>19 - 25 November</td>
<td>THANKSGIVING BREAK</td>
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<td>26 November – 7 December</td>
<td>Open-Channel Flow</td>
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<td>7 December</td>
<td>Course Review</td>
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<tr>
<td>10 December</td>
<td>Final Exam (7:30 – 9:30AM)</td>
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Laboratory: Laboratory participation is mandatory for course credit. You must get a passing grade in the lab in order to pass the course. A syllabus for the laboratory, along with details on preparation and submission of lab reports, will be provided in the first lab session held the week of 27 August.
Homework: Typically, eight to twelve problems will be assigned each week. Usually, problems will be posted each Friday on the class website at http://www.engr.colostate.edu/CIVE300/course_info.html and will be due on the following Friday. Though all problems must be turned in, three problems out of each homework assignment will be indicated by the instructor as candidates for grading and only one of those three will be thoroughly graded. Points will be deducted for problems that were assigned but not worked.

This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog (page 7) and the Student Conduct Code (http://tilt.colostate.edu/integrity/honorpledge/index.cfm). The Honor Pledge (attached) with a place for the student’s signature must be applied to every exam and assignment (lecture and lab) turned in for this course. Please make sure that you read, understand, and comply with the Policy on Academic Integrity in CIVE 300 statement on the class website. Late homework will not be accepted.

The instructor and TAs will be available to answer your questions regarding homework during their office hours each week. In addition, we plan to arrange a homework question and answer session will be conducted by the TAs, probably on Wednesday evening of each week (firm time and location to be announced). The purpose of these sessions is not to work the problems for you but to clarify the problem statement and to provide guidance about solution methodology.

Solutions to all assigned problems will be posted on the website after about a week. Reading assignments also will be made, for which students will be held responsible.

Exams: Two midterm exams will be given during the semester. The first is tentatively scheduled for sometime during the week of 1 October, and the second for the week of 5 November. The final exam will be comprehensive but at least 50% of the content of the final will cover material presented during the last part of the course. All exams will be closed book but each student will be allowed one side of one 8.5 x 11.0 inch sheet of paper containing his selected hand-written notes.

Grading: Homework – 10%; Pop Quizzes (3 to 5) – 5%; Lab Reports – 20%; Midterm Exams – 20% each; Final Exam – 25%.

A: 90-100%
B: 80-89%
C: 70-79%
D: 60-69%
F: <60%

Term grades for this course will use the +/- grading system as described in the CSU catalog.
Introduction to Instructor:

Born in Texas, I was raised with my younger brother and sister in Louisiana, where my mother still lives (you can probably detect the accent). I completed my BS degree at Louisiana Tech University in 1978 and my MS degree at Colorado State University in 1980. After working for several years, I attended the University of California at Davis where I completed my PhD degree. In 1988, I accepted a position on the Civil and Environmental Engineering faculty here at Colorado State University. I am associated with the Hydraulic Engineering and the Water Resources Planning & Management divisions of our department. Over the course of my career, I have had the opportunity to work on water projects in Egypt, Sri Lanka, India, and Australia and have lectured in China.

I teach a variety of courses, primarily related to fluid mechanics and hydraulic engineering. My research focuses on field and computational analysis for description, design, and management of hydraulic and water resources systems. My specialty is in hydrosystems for irrigation and drainage, particularly open-channel and shallow groundwater systems. Much of my work has examined how to describe, simulate, and optimize such systems subject to various forms of uncertainty. I have some interesting research projects currently that address the characterization and improvement of flow, water quality, and water conservation in rivers, in shallow unconfined aquifers, and in irrigation systems.

My wife of 36 years, Valerie, and I are blessed with two sons, both now grown. Jeremy is a medical doctor serving as a surgeon with the U.S. Army, and is married to Robin. He recently returned from Afghanistan and is now serving in the hospital at Fort Benning in Georgia. Benjamin is a credit analyst for Verus Bank of Commerce here in town, and is married to Katie. We are proud grandparents of Emmi (7 years), Cade (6 years), and Halle (2 years), children of Jeremy and Robin; and Everette (2 years) and Penny (6 months), children of Ben and Katie (stop by my office for pictures). Valerie is the consummate craftswoman: she loves quilting, needlepoint, cross-stitching, stenciling, interior decorating, and cooking. My sons participated in baseball, basketball, and soccer while they were at home. We also have enjoyed camping and skiing as a family. Reading, working in our yard, riding my bicycle, and spending time visiting with people are some of my favorite pastimes. A while back I enjoyed reading the 2009 best-seller by Stephen Meyer entitled Signature in the Cell: DNA and the Evidence for Intelligent Design and Signature of Controversy: Responses to Critics of Signature in the Cell, edited by David Klinghoffer. I hope to start soon on Donald Johnson’s Programming of Life.

I am a Christian. I believe that nature is chock-full of countless examples of the Creator’s intelligent design. I believe that Truth and Right exist in a real and objective sense, that they are found in Christ and should be pursued, and that they bring blessing to those who embrace them. My convictions as a Christian form my world-view and guide the way I strive, under God’s grace, to conduct my personal and professional life. Even though I enjoy my engineering and academic endeavors a great deal, I don’t view them as the most important things (MITs) in life. I welcome the opportunity to chat with students outside of class about these MITs.

I look forward to getting to know you this semester, not only academically and professionally, but also personally. I take seriously my responsibility to help you learn fluid mechanics, a subject that I find to be richly fascinating and immensely practical. Please keep me informed of your concerns about the course.

T. K. Gates
CSU Student Honor Pledge

I pledge on my honor that I have not received or given any unauthorized assistance in this exam [assignment] [academic work].

Signature: ________________________________

Date: __________________