

# CIVE 716 EROSION AND SEDIMENTATION

## Fall 2009 – August 25

- Class: Welcome to CIVE 716 03(3-0-0) Erosion and Sedimentation
- Instructor: Pierre Y. Julien, Professor of Civil and Environmental Engineering  
Engineering Research Center B205, 491-8450  
Email: [pierre@engr.colostate.edu](mailto:pierre@engr.colostate.edu)
- Prerequisites: Interest in river engineering and sediment transport.  
Undergraduate courses in fluid mechanics and differential equations.
- Description: Analysis of the interaction between fluids and solids. Mechanics of sediment transport, incipient motion, bed forms, bed load, suspended load, wash load and total load. Practical applications of sediment transport in open channels and reservoir sedimentation.
- Text: Julien, P.Y., Erosion and Sedimentation, Cambridge University Press  
<http://www.cambridge.org/us/catalogue/catalogue.asp?isbn=0521636396>
- Topics: Physical properties and dimensional analysis  
Mechanics of sediment-laden flows  
Particle motion in ideal and Newtonian fluids  
Turbulent velocity profiles  
Incipient motion and bed forms  
Bed load, suspended load and total load  
Reservoir sedimentation
- Lectures: Monday, Wed. and Fri., 10:00-10:50 am, Room B-205 Engineering
- Office Hours: M-W 11:00 - 12:00 room A207H on campus  
Open-door afternoons at the ERC B-205
- Web-page: The course's web page is  
[http://www.engr.colostate.edu/%7Eepierre/ce\\_old/classes/CE716/index.html](http://www.engr.colostate.edu/%7Eepierre/ce_old/classes/CE716/index.html)
- Computer Model: Develop computer modeling skills for flows over rigid and mobile boundaries, determine bed forms and calculate sediment loads.
- Field Trip: Team assignment to observe and report on erosion and sedimentation features.
- Evaluation:
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| Problem Sets (5 assignments) | 50% |
| Field Trip (team report)     | 10% |
| Computer Modeling            | 20% |
| Final Exam                   | 20% |