AER 1316H: Introduction and Course Outline

Professor D.W. Zingg
(416-667-7709, dwz@oddjob.utias.utoronto.ca, http://goldfinger.utias.utoronto.ca/dwz)

Course Text:

Mark Breakdown: Assignments 60%, final test 40%

There will be 4 assignments. Problems and due dates are posted on my web site. The final test will be type X, i.e. “open book.”

Course Outline

1. Introduction
2. Conservation Laws and the Model Equations
3. Finite-Difference Approximations
4. The Semi-Discrete Approach
5. Finite-Volume Methods
6. Time-Marching Methods for ODE’s
7. Stability of Linear Systems
8. Choice of Time-Marching Methods
9. Summation-by-Parts Operators with Simultaneous Approximation Terms
10. Relaxation Methods
11. Multigrid
12. Newton-Krylov Methods
13. Numerical Dissipation