Course #: CPS 5320 (CRN 25793)
Course Title: Advanced Scientific Computing
Credit Hrs: 3
Term: Spring 2021
Course Meetings & Location: Mostly online (videos at class web page) but the exam, and possibly some classes, will be: MW 12:00-13:20, LART 306
Prerequisite Courses: CPS 5310
Course Fee: (if applicable) None
Instructor: Granville Sewell
Office Location: Bell 200
Contact Info:
Phone # 747-6762
E-mail address sewell@utep.edu
Fax # 747-6502
Emergency Contact
Office Hrs:
Suggested:
Course Objectives (Learning Outcomes):

  a. Learn what partial differential equations and boundary conditions are associated with several basic PDE applications, such as fluid flow, diffusion and heat conduction/convection, elasticity, the Schrodinger equation and Black-Scholes equation.
  b. Learn to actually solve such problems using available software, and post-process the results for graphical display of solutions.
  c. Learn to efficiently parallelize programs for certain linear algebra applications, using MPI.
  d. Gain exposure to other key ideas of modern scientific computing, such as large-scale data analysis and visualization.

Course Activities/Assignments: There will be computer projects assigned regularly.
Assessment of Course Objectives: Grades will be based on computer projects and one exam, details are at the class website, www.math.utep.edu/Faculty/sewell/cps5320/cps5320c.htm
Course Schedule: Complete projects and exam schedule are given at the class website, www.math.utep.edu/Faculty/sewell/cps5320/cps5320c.htm. Drop deadline is April 1.
Grading Policy: 80% based on computer projects, 20% based on one test.
Make-up Policy: Late computer projects not accepted. Make up exam will be given for excused absences.
Attendance Policy: None
Civility Statement: None
Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the CASS at 747-5148 or at <cass@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

Military Statement: