Course #: CPS 5320 (CRN 18688)
Course Title: Advanced Scientific Computing
Credit Hrs: 3
Term: Fall 2016
Course Meetings & Location: MW 13:30-14:50, QUIN 202
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
Office Hrs: MTW 9:00-9:50

Textbook(s), Materials:
Required: None
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/cps5320a.htm

Course Schedule:
Complete projects and exam schedule are given at the class website,

www.math.utep.edu/Faculty/sewell/cps5320/cps5320a.htm. Drop deadline is October 28.

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: If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact as soon as possible