

## Survey of Numerical PDEs ISC 5227

**Instructor:** Ionel Michael Navon

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**Office Hours:** Tuesday: 3:15 -4:15

Thursday: 11 -12

other times by appointment.

**Text:** See book reading list

**Class:** T R : 02:00 PM- 03:15 PM

152 Dirac Science Library

**Website:** <http://people.sc.fsu.edu/~inavon/>

**Content & Objectives:** This course focuses on the three most commonly used techniques for numerically approximating the solution of partial differential equations. Techniques discussed include finite difference methods, finite volume methods, and finite element methods. Other methods will be briefly discussed. The goals for the course are:

- to develop, analyze, and efficiently implement the three numerical methods for partial differential equations;
- to understand the advantages and limitations of each method for various types of problems.

**Grading Policy:** This course is homework and project based; there will be no written exams. Your grade for the semester will be based on homework/computer assignments (60%) and projects (40%).

**Prerequisites:** Prerequisites for this course include programming skills in Fortran 77/ Fortran 90, C, or C++ as well as basic knowledge in calculus, linear algebra, and numerical methods for solving linear and nonlinear systems of algebraic equations. If you do not meet these requirements, please obtain consent of instructor.

**Honor Code:** A copy of the University Academic Honor Code can be found in the current Student Handbook.

You are bound by this in all of your academic work. It is based on the premise that each student has the responsibility 1) to uphold the highest standards of academic integrity in the student's own work, 2) to refuse to tolerate violations of academic integrity in the University community, and 3) to foster a high sense of integrity and social responsibility on the part of the University community.

You have successfully completed many mathematics courses and know that on a "test" you may not give or receive any help from a person or written material except as specifically designed acceptable.

Out of class you are encouraged to work together on assignments but plagiarizing of the work of others or study manuals is academically dishonest.

**ADA:** Students with disabilities needing academic accommodations should:

- 1) register with and provide documentation to the Student Disability Resource Center (SDRC);
- 2) bring a letter to the instructor from SDRC indicating you need academic accommodations.

This should be done within the first week of class.

This and other class materials are available in alternative format upon request