



## Numerical Methods for Calculus and Differential Equations MA 3457 / CS 4033 - 2016 A term

**Professor** [Dr. Suzanne L. Weekes](#)  
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**Office Hours** Prof. Weekes: Mon 9:00 - 10:00 Thurs 1:00 – 1:50 and by appt.  
 Jill Resh: Tues 3:00 – 4:00 Fri 10:00 – 11:00

**Course Web Page** <https://users.wpi.edu/~sweekes/MA3457/>

**Lectures** MTRF 2:00-2:50 Olin Hall 223  
**Conference** W 2:00-2:50 Olin Hall 223

**Grading** Exams = 25% x 2  
 Homework/Projects = 50%

**Textbook** “Numerical Analysis” by Richard Burden and Douglas Faires

**Course Information** [Lecture and HW Schedule](#) [Students with Disabilities](#) [Academic Dishonesty](#)

Numerical Analysis is the study of algorithms for mathematical problems involving real or complex numbers. The goal of this course is to provide an introduction to some basic numerical techniques for differential and integral calculus and differential equations.

[Topics](#) will include

- interpolation,
- approximation theory,
- numerical differentiation and integration,
- numerical solutions of ordinary differential equations.
- Error analysis will be emphasized throughout.

**Recommended background:** Ordinary Differential Equations (MA 2051).

An ability to write computer programs in a scientific language is assumed.

You will perform computer experiments using **MATLAB**, an integrated computing environment that includes a very simple, high-level, powerful programming language, graphics tools, and easy access to a great variety of library software.

### Course Information

The class meets five times a week: four times with the professor and once with the teaching assistant. You are

responsible for any and all material discussed and distributed in lecture and conference.

**NOTE:** Though the course posting states that Wednesday is the conference day, there may be a week where lecture is given on Wednesday and the conference is held on another day of the week.

### Homework:

Homework will be posted on the web on the [Lecture and HW Schedule](#) page.

Your work must be clear and legible. **No late homework will be accepted.** If you will not be in class the day that homework is due, please have it turned in by someone else or turn it in before the start of class.

Start your homework the day that is assigned. It is given a week before it is due because it may take a week to get it completed correctly.

### Learning Matlab:

Matlab will be the software that we will use in this course.

You can get acquainted with Matlab by following the Matlab lecture notes found on our [Lecture and HW Schedule](#) page.

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### Academic Dishonesty

Please read WPI's [Academic Honesty Policy](#) and all its pages. Make note of the examples of academic dishonesty; i.e. acts that interfere with the process of evaluation by misrepresentation of the relation between the work being evaluated (or the resulting evaluation) and the student's actual state of knowledge.

**Each student is responsible for familiarizing him/herself with academic integrity issues and policies at WPI. All suspected cases of dishonesty will be fully investigated.**

Ask Prof. Weekes if you are in any way unsure whether your proposed actions/collaborations will be considered academically honest or not.

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### Students with Disabilities

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me that may impact your performance or participation in this course, please make an appointment with me as soon as possible.

If you have approved accommodations, please go to the Exam Proctoring Center (EPC) in Morgan Hall to pick up Letters of Accommodation.

If you have not already done so, students with disabilities who need to utilize accommodations in this class are encouraged to contact the Office of Disability Services (ODS) as soon as possible to ensure that such accommodations are implemented in a timely fashion. This office can be contacted via email [DisabilityServices@wpi.edu](mailto:DisabilityServices@wpi.edu), via phone: (508) 831-4908, or in person: 137 or 124 Daniels Hall.