MATH3476 Numerical Methods (Autumn 2019)

Dr. Yue-Kin Tsang
Office: School of Mathematics 9.30
Email: y.tsang@leeds.ac.uk

Time and location

Week 1-5:	Mon 10-11,	Roger Stevens LT08 (9.08)
	Thu 12-13,	Parkinson SR (B.08)
Week 6, 7, 10, 11:	Mon 10-11,	Roger Stevens LT08 (9.08)
	Wed 13-14	Roger Stevens LT24 (10.24)
	Thu 12-13,	Parkinson SR (B.08)
Week 8, 9:	no lectures	

Course website: `www1.maths.leeds.ac.uk/~amtyt/3476`

Flipped classroom

This module is delivered in the flipped classroom format. We generally go through the following three steps for each class:

1. Course notes will be updated according to the learning schedule on the course website. There will be *reading assignment* before each class for you to learn the theoretical material at your own pace.
2. Upon completing the reading assignment, you should attempt the online *quiz questions* hosted on Minerva. These are simple questions designed to help you to consolidate what you have learned.
3. During the classes, we run *practical sessions* to work in groups on more challenging problems. You should also discuss with your fellow students any questions you might have on the course materials. Equally important, be prepared to explain what you have learned to your classmates.

It is essential that you work through the reading assignment and quizzes before coming to class. Please do not come to classes "cold", as this wastes time for those students who have made the effort to learn on their own.

Problem sets

Although this course is assessed 100% by examination, you should not treat the problem sets as optional, because they will *not* merely ask questions which are almost identical to those in the notes. Rather, they are designed to supplement the notes, addressing more subtle and/or difficult aspects. In this sense they provide essential preparation for the examination.

Examination

100% assessment by 2-hour examination at end of semester.

Course aim

The course aims to provide an understanding of how numerical algorithms work and are justified. A balance will be maintained between the theoretical and practical aspects of the subject. The associated *Python scripts* aims to bring the course "alive" and give you a feeling how the ideas covered can be implemented. This course provides a solid foundation for further study on the numerical solution of ODEs and PDEs arising in real applications.

Useful resources

An extensive book list and links to online video resources are available on the course website.