

UMCS  
Electrodynamics  
Summer 2020/2021

**Instructor Information:**

*Instructor:* Dr Nicholas Sedlmayr

*Office:* 306

*Email:* [sedlmayr@umcs.pl](mailto:sedlmayr@umcs.pl)

**Course Web Page:** See [this](#) page.

**Course Content:** The topics of this course will include:

- Introduction to electromagnetism in physics and Maxwell's equations
- Electrostatics
- Magnetostatics
- Electromagnetism
- Electrodynamics and Maxwell's equations
- Electromagnetism and special relativity
- Electrodynamics in simple materials.
- Refresher on vector calculus and the mathematical methods used in electrodynamics.

**Grading:** The course grade will be based on participation in the classes and a final exam/test.

**Objectives:** To have an overview of how the electric and magnetic fields behave, and how they interact. To understand Maxwell's equations and be able to solve simple physical problems, calculating the electromagnetic fields created by charges in different situations and in simple materials. To understand how electrodynamics fits into the wider landscape of physics.