Lecturer: J. D. D. Martin, jddmartin@uwaterloo.ca
http://www.science.uwaterloo.ca/~jddmarti/
office: Physics Building Room 357
phone: 519–888–4567 Ext. 33201

Office Hours: Thursdays 5:30pm-6:30pm and by appointment.

Textbook: “Introduction to Electrodynamics”, by D. J. Griffiths
The third edition is also entirely suitable (I will point out minor differences). The book should be
useful in future courses and is on reserve at the library together with some additional references.

Course Content: Magnetic fields, Ampere’s law, induced electromotive forces, magnetic devices,
magnetic properties of materials, inductance, introduction to Maxwell’s equations and electromagnetic
waves.

Or, in terms of the textbook (same for both 3rd and 4th editions):

1. Magnetostatics (all of Chapter 5)
2. Magnetic fields in matter (all of Chapter 6)
3. Electrodynamics (all of Chapter 7)
4. Conservation laws (Section 8.1, Charge continuity and Poynting’s theorem)
5. Electromagnetic waves (Section 9.1, 9.2)

Some notes:

• The course will follow the textbook closely. For the final exam, you are responsible for all of
the material in the chapters/sections listed above.
• Additional material (demonstrations, applications etc...) will be covered in the lectures.
• In Phys 242 (and the mathematical courses that are prerequisites to Phys 342) you will have
covered much of the material in Chapters 1 to 4. A good understanding of this earlier material
is necessary. You may need to review this material.

Course web-site: http://learn.uwaterloo.ca
Course communication will be by e-mail through your Learn account. Check this regularly (daily)
— or forward to an e-mail account you do check. Non-critical information will be “tweeted” by
@j_dd_martin using the #phys342 hashtag (see web-site for link). See the web-site for required
statements concerning Academic Integrity and Student Grievances.

Course grading:

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The midterm will be held on Thursday, February 27th, from 7–9 pm in RCH 301.

I am busy just now again on electro-magnetism and think I have got hold of a good thing, but can’t
say. It may be a weed instead of a fish that, after all my labor, I may at last pull up.
– Michael Faraday, 1791 – 1867.