2017 PHYS1002 Reading Schedule and Lecture Outline for Electricity

(Lecturer: Prof Warwick Bowen)

Text: Randall D. Knight, *Physics for Scientists & Engineers: a strategic approach with Modern Physics*, 4th Edition, Publisher: Pearson / Addison Wesley, ISBN 1-292-15742-9

Lecture	Date	Topic	Reading
Week 1			**Sections from Chapters 22 & 23**
0	24 July	Introductory lecture	
1	26 July	Concepts of charge/Insulators and conductors/ Coulomb's law	Ch. 22, Sect. 22.3-22.4 *Expected prior knowledge:* Sect. 3.2-4 & 22.1-22.2
2	28 July	The electric field model/ Superposition of electric fields	Ch. 22, Sect. 22.5 Ch. 23, Sect. 23.1-23.2
Week 2			**Sections from Chapters 23 & 24**
3	31 July	Electric fields of continuous charge distributions/Electric fields of basic objects/Parallel plate capacitor	Ch. 23, Sect. 23.3-23.5
4	2 Aug	Motion of charged particles/Electric dipoles/Symmetry/ Flux	Ch. 23, Sect. 23.6-23.7 Ch. 24, Sect. 24.1-24.3
5	4 Aug	Calculating flux/Gauss's Law	Ch. 24, Sect. 24.3-5
Week 3			**Sections from Chapters 24 & 25**
6	7 Aug	Gauss's Law/ Conductors in electrostatic equilibrium	Ch. 24, Sect. 24.5-6
7	9 Aug	Electric potential energy/Electric potential	Ch. 25, Sect. 25.1-25.2, 25.4 *Expected prior knowledge:* Sect. 9.1-9.2 *Optional extension:* Sect. 25.3
8	11 Aug	Electric potential inside a parallel plate capacitor/Electric potential of point charges	Ch. 25, 25.5-7
Week 4			**Sections from Chapter 26**
9	14 Aug	Connecting potential and field/ Finding E from V	Ch. 26, Sect. 26.1-26.2
-	16 Aug	*****No lecture*** Ekka holiday**	
10	18 Aug	Conductors in electrostatic equilibrium/Sources of electric potential/Capacitance.	Ch. 26, Sect. 26.3-26.5 *Optional extension:* Sect. 26.6-26.7
Week 5			**Sections from Chapter 27**
11	21 Aug	Electron current/Ohm's Law	Ch. 27, Sect. 27.1,27.3,27.5 *Optional extension:* Sect. 27.2, 27.4, 28.1-28.3
12`	23 Aug	Review/catch up lecture	

NOTE: I suggest you take notes on the key points. Do NOT re-write large sections of the text – this is a waste of precious time. *Pay attention to the weekly announcements*: they list the key information you should focus on in the reading for each lecture.