Distribution of topics over lectures;
depending of the progress of the course, the contents are likely to change:

A Introduction, Maxwell equations [G] 7.3.5, brush up on vector calculus [G] 1.1-1.3, Dirac delta [G] 1.5, potentials [G] 1.6, app. B, Taylor expansion [-] , Fourier transform [-] , [G] pr. 9.32

B Maxwell equations, brush up on electro- and magnetostatics [G] 2, 5, multipole expansion [G] 3.4 (pr. 3.33, 3.45a), 5.4.3 (pr. 5.33)

C Maxwell equations, microscopic [G] 7.3.3 and macroscopic [G] 7.3.5, time- and frequency domain [-] [G] pr. 9.26a, differential and integral form [G] 7.3.6, interface conditions [G] 7.3.6, continuity equation [G] 8.1.1, energy [G] 8.1.2 and momentum [G] 8.2 of electromagnetic fields

D Wave equation [G] 9.2.1, 9.3.1, plane waves [G] 9.1.1, 9.1.2, plane harmonic electromagnetic waves [G] 9.2.2, refractive index [G] 9.3.1, polarization [G] 9.2.2, 9.1.4, pr. 9.8, energy transport [G] 9.2.3, spherical waves [G] pr. 9.33

E Reflection and transmission at interfaces [G] 9.3.2, 9.3.3, lossy materials [G] 9.4.1, wave packets [-] [G] p. 399, dispersion [G] 9.4.3, phase and group velocity [-] [G] 9.4.3

F Maxwell equations, vectorial and scalar Helmholtz equation [-] , 2D configurations [-] (intermezzo), mode problems [G] 9.5.1, metallic [G] 9.5.2, pr. 9.30 and dielectric waveguides [-]

G Scalar and vector potentials [G] 10.1.1, gauge conditions [G] 10.1.2, 10.1.3, retarded potentials [G] 10.2.1, 10.2.2, electric and magnetic dipole radiation [G] 11.1.1–11.1.3

H Special relativity [G] 12 (overview/excerpts) ; transmission lines [U] 7 (overview/excerpts)

Indices [G] and [U] indicate textbook passages that relate to the respective parts of the lectures. The way and order of presentation, also the notation, and the material covered may differ from the textbooks.

[G]: D.J. Griffiths, *Introduction to Electrodynamics*, 3rd international edition, Prentice Hall, 2003; pr: problem, app: appendix.

[U]: F.T. Ulaby, *Electromagnetics for Engineers*, Prentice Hall, 2004 (ch. 7 available via BB).

Note that the actual contents of the lectures & homework will be relevant for the tests and the exam.