

<u>Date</u>	<u>#</u>	<u>Lecture*</u>	<u>Assignment</u>
① Wed. 13 Jan.	1	Introd <sup>n</sup> . EM Wave Eqtn & D'Alembert Sol <sup>n</sup> (pp Waves 1-2).	-
Fri. 15 " CH.7	2	Plane waves & Fourier Sol <sup>n</sup> . Effect of $\delta$ . Polar <sup>n</sup> (pp. 2-5).	⑭ Probs. 46-48 (45 pts) ✓
② Mon. 18 "	-	<b>HOLIDAY</b> : M. L. King	-
Wed. 20 "	3	Polar <sup>n</sup> (pp. Waves 5-6). Snell's Law & Fresnel Eqs. (pp. 7-8).	-
Fri. 22 "	4	Fresnel Eqs. (pp. 8-10). EM Waves in Dispersive Media (p. 11)	⑮ Probs. 49-51 (50 pts) ✓
③ Mon. 25 "	5	EM Waves in Dispersive Media (pp. Waves 11-13). Water.	-
Wed. 27 "	6	Conductivity. Plasma limit. Metals. (pp. Waves 14-17).	-
Fri. 29 "	7	EE Version of Att <sup>n</sup> : $\delta$ (pp. 18-19). Ionospheric Waves (A1-A2)	⑯ Probs. 52-55 (50 pts) ✓
④ Mon. 1 Feb.	8	Ionospheric Waves (A3-A4). Dispersion (pp. Waves 20-20).	-
Wed. 3 "	9	Dispersion of Wave Packets I (pp. Waves 20-22).	-
Fri. 5 "	10	Dispersion of Wave Packets II (pp. Waves 23-26).	⑰ Probs. 56-59 (50 pts) ✓
⑤ Mon. 8 "	11	Dispersion Relations I: Introd <sup>n</sup> ; $\epsilon(\omega)$ analytic (pp. 1-5).	-
Wed. 10 "	12	Dispersion Relations II: Kramers-Kronig relations (pp. 5-9).	-
Fri. 12 " CH.11	13	SRT ①: Postulates & Lorentz Transf <sup>n</sup> (pp. SRT 1-5). ★	⑱ Probs. 60-62 (40 pts) ✓
⑥ Mon. 15 "	-	<b>HOLIDAY</b> : President's Day.	-
Wed. 17 "	14	SRT ②: Lorentz Tr. & Remarks. $(\Delta S)^2 \geq 0$ . (pp. SRT 5-8).	- $\Sigma [⑭-⑱] = 285 \text{ pts.}$
Fri. 19 "	15	SRT ③: Causality. 4-Vectors [to Eq. (3)] (pp. SRT 9-12).	⑲ Probs. 63-66 (50 pts) ✓
⑦ Mon. 22 "	16	SRT ④: 4-Vectors: $\hat{u}$ , $\hat{a}$ , $\hat{p}$ , etc [pp. SRT 11-15].	-
Wed. 24 "	17	Relativistic Rocket Trip. (pp. 1-7).	- $\leftarrow$ due Mon. 3/8.
Fri. 26 "	18	SRT ⑤: Formal Construction of LT's $\Lambda$ (pp. SRT 16-19).	⑳ Probs. 67-69 (40 pts) ✓
⑧ Mon. 1 Mar.	19	SRT ⑥: Contra & Covariant Notation (pp. SRT 20-23).	-
Wed. 3 "	20	finish Cov <sup>n</sup> Not <sup>n</sup> (p. 24). Start Covariance of EM (pp. 1-2).	-
Fri. 5 "	21	EM Covariance II: $\partial_\alpha J^\alpha = 0$ , to $\partial_\alpha F^{\alpha\beta} = \frac{4\pi}{c} J^\beta$ (pp. 3-7).	no assignment (exam study)
⑨ Mon. 8 "	22	finish EM Covariance (pp. 8-10) Introd. EM L & H (p. 1).	-
Wed. 10 " CH.12	23	Relativistic L & H: construction of $L_{EM}$ & $H_{EM}$ (pp. 1-4).	- $\leftarrow$ due Fri. 3/12.
Fri. 12 " ↓	24	<b>MIDTERM EXAM</b> (160 pts): 3-5 P.M., AJM 230. ¶	㉑ Probs. 70-72 (40 pts).
⑩ Mon. 15 "	-	<b>SPRING BREAK</b>	-
Wed. 17 "	-	<b>SPRING BREAK</b>	-
Fri. 19 "	-	<b>SPRING BREAK</b>	no assignment (vacation!)
⑩ Mon. 22 "	25	Review & finish Relativistic L & H (pp L & H 4-7)	-
Wed. 24 "	26	Lagrangian for a Continuum (pp. L & H 8-10).	- $\leftarrow$ due Fri. 4/2.
Fri. 26 "	27	Finish $L$ (continuum), pp. 11-12. Start $L$ (field), pp. 13-14.	㉒ Probs. 73-75 (40 pts.)
⑪ Mon. 29 "	28	$L$ (field) $\rightarrow$ Max. Eqs. (pp L & H 14-17).	-
Wed. 31 "	29	Proca's $L$ (field), p L & H 18. Simple Rad <sup>n</sup> (pp. RAD 1-2).	- $\leftarrow$ due Mon. 4/12.
Fri. 2 Apr.	30	Simple Rad <sup>n</sup> (pp. RAD 2-4): length scales & lead <sup>n</sup> terms.	㉓ Probs. 76-78 (50 pts)

CH.9

\* All lectures delivered on overheads, with Xerox handouts to students.

\* For first 13 lectures, have covered 45 pp. of overheads  $\Rightarrow$  3.5 pp./lecture.

¶ At 23 lectures: 86 pp.  $\Rightarrow$  3.7 pp./lecture.

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<u>Date</u>	<u>#</u>	<u>Lecture</u>	<u>Assignment</u>
⑫ Mon. 5 Apr.	31	Simple Rad <sup>n</sup> (pp. RAD 5-7). Summary & Dipole Approxn.	- $\Sigma [14-23] = 455$ pts.
Wed. 7 "	32	Diffraction Theory I: Kirchhoff Solution (pp DT 1-4)	-
Fri. 9 "	-	<b>HOLIDAY</b> University Day.	-
⑬ Mon. 12 "	33	Diffraction Theory II: Fraunhofer & Fresnel (pp. 5-8)★	⑭ Probs. 79-80 (40 pts)
Wed. 14 CH13	34	Stopping Power I: collisions in matter, Bohr's Eq. (pp 1-4).	-
Fri. 16 "	35	Stopping Power II: Bethe's QM correction. Vs. Exp (pp. 5-8).	-
⑭ Mon. 19 "	36	Stopping Power III: Fermi density effect Cerenkov (pp. 8-12).	⑮ Probs. 81-84 (50 pts)
Wed. 21 CH14	37	q Rad I: Covariant Soln for $A^\mu(x)$ ... pp. 1-5.	-
Fri. 23 "	38	q Rad II: Lienard-Wiechert pts & fields ... pp. 5-7.	-
⑮ Mon. 26 "	39	q Rad III: Rad <sup>n</sup> per Larmor & Lienard (pp. q Rad 8-10).	⑯ Probs. 85-87 (30 pts)
Wed. 28 "	40	q Rad IV: Rad <sup>n</sup> from <sup>linear</sup> circular accel's. & Distro <sup>n</sup> (pp. 10-13).	-
Fri. 30 "	41	q Rad V: & distrib <sup>n</sup> of rad <sup>n</sup> : <sup>linear</sup> circular motion; $\beta \rightarrow 1$ case (pp. 13-16).	-
⑯ Mon. 3 May	42	q Rad VI: ultrarelativistic q spectrum. Synch Rad (pp. 16-20).	no assignment (exam study)
Wed. 5 " CH17	43	Eq.-of-Motion for q: I: need for frr correction (pp. 1-5).	-
Fri. 7 " ↓	44	Eq.-of-Motion for q: II: <sup>Abraham</sup> <sup>Lorentz</sup> Eq. Schott term (pp. 6-10)	-
⑰ Mon. 10 "	-	<b>EXAM WEEK</b>	<b>EVALUATION</b>
Wed 12 "	-	FINAL is worth 300pts	
Fri. 14 "	-	Final is 3-6 P.M., Mon. 10 May '93 in AJM 230	

Est. prob<sup>m</sup> set pts (#14-26): 550-580 pts. ← was 575 pts, actual.

Exams should be worth  $\approx 450$  pts total (45.0-43.7% of grade)

So, peg MIDTERM @ 150-180 pts || MIDTERM was 160 pts.

" FINAL @ 300-270 pts. || FINAL was 300 pts.

All in all: HMK = 575 pts (55.5% of grade)

EXAMS = 460 pts (44.5% of grade)

Total: 157 pp. of notes in 43 lectures  $\Rightarrow$  3.65 pp./lecture.

★ At 32 lectures, have covered 115 pp  $\Rightarrow$  3.6 pp./lecture