AP PHYSICS 'C'
WORKBOOK

ELECTRICITY & MAGNETISM

by

John McGehee

- PREFACE -

The eight units included in this workbook are a compilation of lecture notes, worksheets and other materials covering the electricity and magnetism portion of the Advanced Placement Physics C-level course. The material covered is limited to the subject areas listed in the learning objectives published by the College Board. The units are written in workbook form for the purpose of involving the student in the development of the concepts of electricity and magnetism and to facilitate independent study. The workbook is not designed to replace a textbook, but to clarify and compliment it and focus the student's attention specifically on the material that will be covered on the C-level examination. Although it is keyed to the particular text I was using at the time, the material is standard in all commonly used calculus based college physics textbooks.

Assembling these materials into their present form was accomplished during the summers of 1983, 1984, and 1985 through the support of TRW, Inc. without whose encouragement and financial support the project could never have been completed.

John McGehee

Palos Verdes Peninsula High School
27118 Silver Spur Road
Rolling Hills Estates, CA 90274

310.377.4888

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Table of Contents

AP Physics Assignment Sheet - ELECTRICITY & MAGNETISM

Unit I - Charged Particles & Electric Fields

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapter 23

Day	Pages in Workbook	Workbook Problems
1, 2	1 through 9	1 through 8
3	10 through 15	9 through 12
4	16 through 20	13
5	21 through 27	14 through 16

Unit II - Electrostatic Fields & Gauss' Law

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapters 23 & 24

Day	Pages in Workbook	Workbook Problems
1	1 through 5	1
2	6 through 11	2
3	12 through 16	3 through 6
4	17 through 25	
5	26 through 32	
6		7 through 12
7	Catch up and	review for Quiz
8	Quiz on Units	I and II

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Unit III - Electric Potential

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapter 25

Day	Pages in Workbook	Workbook Problems
1,2	1 through 6	1 through 7
3	7 & 8	8 through 10
4	9 through 16	11 through 14
5	17 through 22	15 through 19
6	23 through 24	
7	Quiz on	Unit III

Unit IV - Capacitors & Dielectrics

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapter 26

Day	Pages in Workbook	Workbook Problems
1,2	1 through 8	1 through 3
3	9 through 16	4 through 8
4,5	17 through 22.5	9 through 13
6	22.5 through 23	14 through 17

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Unit V - Ohm's Law & D.C. Circuits

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapters 27 & 28

Day	Pages in Workbook	Workbook Problems
1-3	"D.C. Circuits"	Experiment
	1 through 7.5	1 through 3
4,5	7.5 through 11	4 through 7
	12 through 14	8 through 11
6	15 through 22.5	12 & 13
7	22.5 through 27	14 through 19
8,9	28 through 35	20 through 23
10	Quiz on Units	IV & V

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Unit VI - Magnetic Forces & Fields

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapter 29

Day	Pages in Workbook	Workbook Problems
1	1 through 10	
2	11 through 13	1 through 5
3	14 through 18	6 through 10
4	19 through 24	11 through 16
5	Quiz on	Unit VI

Unit VII - Calculating Magnetic Fields

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapter 30

Day	Pages in Workbook	Workbook Problems
1	1 through 5	1 through 3
2	6 & 7	4 through 12
3	8 & 9	13 through 16
4	10 through 14	17 through 20
5	15 through 17	21 through 25
6	Quiz on	Unit VII

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Unit VIII - Electromagnetic Induction

Reference: PHYSICS FOR SCIENTISTS & ENGINEERS, Serway, 3rd ed., Chapters 31 & 32

Day	Pages in Workbook	Workbook Problems
1	1 through 11	
2		1 through 7
3	12 through 16	8 through 10
4	17 & 18	11 through 14
5	19 through 26	15 & 16
6	27 through 36	
7		17 through 20
8	Quiz on	Unit VIII