UNIVERSITI TEKNOLOGI MARA
PULAU PINANG

JABATAN SAINS GUNAAN

COURSE OUTLINE
PHYSICS III
Phy192
Sem Dis 2007 – Apr 2008

INSTRUCTOR'S INFORMATION

Name : MOHD NOOR BIN MOHD ALI
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COURSE INFORMATION

Course Name : Physics III
Course Code : PHY 192
Programmes :
1. Diploma In Electrical Engineering - Electronic (EE111)
2. Diploma In Electrical Engineering – Power (EE112)
3. Diploma In Electrical Engineering - Instrumentation (EE113)

Credit Hours : 3
Contact Hours : Lecture (3hrs/week)
: Tutorial (1hr/week)
Status : Core Subject
Prerequisite : Physics 1 (PHY140)

Synopsis : Physics III is conducted in parallel with Physics II. It includes the topic in electric and magnetism which are very important for electrical student. Physics III also include advanced problem-solving topic in electric, magnetism and mechanic which teaches in detail to enhance the knowledge needed in electrical engineering course. To enable student transition from basic level to professional level, lectures are conducted in English.

Objectives : On completion of this course, students should be able to:
1. Understand the topic of electric, magnetism and mechanic.
2. Perform calculation involving advanced problem in electric and magnetism.
3. Relate the physics principles in electric and magnetism with basic engineering.
4. A critical attitude towards idea and information

References

1. Serway, R. A *Physics for Scientist and Engineers*, Saunders College, Publishing, N. York 1986
2. Halliday, D, Resnik R, *Physics VOL I dan II*, John Wiley & Sons, Inc 1990.
3. Russel E. Lueg, Erwin A. Reihard, *Basic Electric Circuits for Engineers,* International Text Book Company, Scranton, Pennsylvania, 1972

Course Textbook College Physics, Giambattista, Richardsan and Richardson, McGraw-Hill

Recommended Web Site Hyper Physics, C.R. Nave, Georgia State University
http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html
Course Announcement and Materials
http://www.geocities.com/fizikuitmpp/mnma.htm

LESSON PLAN

Week	Dates	Total Hours	Contents	Text Reference
1.	31 Dis 2007 – 4 Jan 2008 *Thn Baru – 1 Jan*	1 2	Rotational Kinematics and Kinetics, Torque Acting On a Rigid Body Moment of Inertia : definition, formulas for uniform and non uniform rigid bodies	5.1 8.1 8.2 8.6 8.7
2.	7 Jan -11 Jan 2008 *Awal Muharram – 10 Jan*	1½ 1½	Moment of Inertia : system of particles, parallel and perpendicular theory Radius of gyration, , Work Done & Power in Rotational Motion	
3.	14 Jan – 18 Jan 2008	1½ 1½	Definition of capacitance, Charging and discharging Capacitors in steady state, Capacitors in transient state	17.5 17.6 17.7
4.	21 Jan – 25 Jan 2008 *Taipusam – 23 Jan*	1½ 1½	Capacitor Network: serial and parallel, Charge transference. Energy stored in charged capacitor.	
5.	28 Jan – 1 Feb 2008	1 1 1	***Test 1*** Kirchoff's voltage and current laws Principles of superposition , Branch and Loop Current Analysis applied to 2 and 3 loop Circuits	17.2 18.1 – 18.9
6.	2 Feb – 10 Feb 2008 Thn Baru Cina – 7 & 8 Feb		Mid Semester Break	
7.	11 Feb – 15 Feb 2008	1 2	Using loop current method to analyze multi source circuit Mathematical methods used: variable elimination, determinants	17.2 18.1 – 18.9
8.	18 Feb – 22 Feb 2008	2 1	Force on charged particles- electric field Force on charged particles- magnetic	19.1 – 19.7
9.	25 Feb – 29 Feb 2008	2 1	Force on conductors in magnetic field, Force on loop carrying current conductors – DC and AC motors	
10.	3 Mac -7 Mac 2008	2 1	Application : simple structure of CRO, Hall effect, mass spectrometer, conversion of meter (voltmeter, ammeter) ***Test 2***	
11.	10 Mac – 14 Mac 2008	1 1 1	Magnetic flux, Flux linkages , Faraday's Law of Induction, Changing field / area / speed Application to dynamos	20.1 – 20.9
12.	17 Mac – 21 Mac 2008 Maulidur Rasul – 20 Mac	1 1	Inductors: Self and Mutual Inductance Transformers: principle and structure of simple ideal transformers	
13.	24 Mac – 28 Mac 2008	1 1 1	Definition, waveform, phase relation between V and I. A.C: Average, Mean, RMS values, instantaneous values Solution of AC circuit : Reactance – inductive, X_L , Reactance – capacitive, X_C X_L & X_C dependency on frequency .	21.1 – 21.6

14.	31 Mac – 4 Apr 2008	1 1 1	Series RL, RC circuits – Solution for V and I Series RCL circuits– Solution for V and I , resonance Impedance dependence on frequency	
15.	7 Apr – 11 Apr 2008	1 2	***Test 3*** *Revision*	
16.	*12 Apr – 20 Apr 2008*		*Study Week*	
	21 Apr – 11 Mei 2008 *Labor Day – 1 May*		**FINAL EXAMINATION**	
			Semester Break	

ASSESSMENT

Method	**Frequency**	**% of Total Grade**	Score	Total
Quizzes	6	10		
Tests	3	40		
Final Exam	1	50		
Course Total		**100**		

A Grade of C is 50% of the total possible points.

HOMEWORK/ TUTORIALS:

You will be assigned homework problems to solve. The homework will be collected at the **beginning** of tutorial session before being discussed. Quizzes/pop quizzes may also be given during tutorial session. You are also advised to try relevant selected problems at the end of each relevant chapters in the reference text and also the previous semesters Final Examination Questions available in the library.

RULES AND REGULATIONS:
Rules and regulation of Peraturan Akademik UiTM (latest edition) will be in effect.

Attendance is a requirement and will be taken at every class session. (2.4.3)
Disciplinary action will be taken against students who missed classes without valid reasons.
MC is only valid if the lecturer is notified within 48 hrs after the student returns to class.
A photocopy of the MC must be given to the lecturer.

Any disruption in the classroom will be not be tolerated. (No Handphones, No latecomers)

Makeup test will not be given without valid and verifiable reasons and only will be given within 2 weeks of the missed test.

IT IS YOUR RESPONSIBILITY TO NOTIFY THE LECTURER OF ANY DIFFICULTIES, ABSENTISM, ETC

Study Tips
Students are advised to maintain good study skills to excel in this course.
Maintain an organized notebook.
Complete all given work on time. (Tutorials, Assignments)
Get help as soon as possible. (Friends, Reference book, Lecturer)

REMEMBER : YOU ARE RESPONSIBLE FOR YOUR STUDY.

The day you begin taking full reponsibilities, the day you stop making excuses, is the day you begin moving to the top.