Rancangan Pengajaran Semester 2
Sistem Dua Semester Sesi 2023/2024
SP025 - Physics 2
Unit Fizik
Kolej Matrikulasi Sarawak

WEEK	DATE	TOPICS		LECTURE			TUTORIAL			PRACTICAL	ASSESSMENT	REMARKS
							T1	T2	T3			
1	09-13/12/23	1.0	Electrostatics	L1	1.1	Coulomb's Law	1.1	1.2	1.2			*New Year's Day 1/1/2024*
					1.2	Electric field						
2	16-20/01/24			L2	1.3	Electric potential	1.3	1.4	1.4	1 Capacitor		
					1.4	Charge in a uniform electric field						
3	15-19/01/24	2.0	Capacitor and Dielectrics	L1	2.1	Capacitance and capacitors in series and parallel	2.1	2.1	2.2			
					2.2	Charging and discharging capacitors						
4	22-26/01/24			L2	2.3	Capacitors with dielectrics	2.2	2.3	3.3	2 Ohm's Law		
5	29/01-02/02/24	3.0	Electric Current and Direct-Current Circuits	L1	3.1	Electrical current	3.1	3.2	3.3			
					3.2	Ohm's Law and resistivity						
					3.3	Variation of resistance with temperature						
					3.4	Electromotive force (emf), internal resistance and potential difference						
					3.5	Resistors in series and parallel						
6	05-09/02/24			L2	3.6	Kirchhoff's Rules	3.4	3.5	3.6	3 Potentiometer		
					3.7	Electrical energy and power						
					3.8	Potential divider						
					3.9	Potentiometer						
7	12-16/02/24	4.0	Magnetism	L1	4.1	Magnetic field	3.6	3.7	3.8		UPS 1	*Chinese New Year 10 - 12/02/2024*
					4.2	Resultant magnetic field produced by current-carrying conductor						
					4.3	Force on a moving charged particle in a uniform magnetic field						
8	19-23/02/24			L2	4.4	Force on a current carrying conductor in a uniform magnetic field	3.9	4.1	4.2	4 Magnetic Field		
					4.5	Forces between two parallel current-carrying conductors						
					4.6	Application of motion of charged particle						
9	26/02-01/03/24	5.0	Electromagnetic Induction	L1	5.1	Magnetic flux	4.3	4.4	4.5		Assignment (Topic 4)	
					5.2	Induced emf						
10	04-08/03/24			L2	5.3	Self-inductance	4.6	4.6	5.1	5 Geometrical Optics		Assignment Due
					5.4	Energy stored in inductor						
					5.5	Mutual inductance						
11	11-15/03/24	6.0	Alternating Current	L1	6.1	Alternating current	5.2	5.3	5.4		Practical Test (Group A)	
					6.2	Root mean square (rms)						
12	18-22/03/24			L2	6.3	Resistance, reactance and impedance	5.5	6.1	6.2		Practical Test (Group B)	
					6.4	Power and power factor						
13	25-29/03/24	7.0	Optics	L1	7.1	Reflection at a spherical surface	6.3	6.3	6.4		UPS 2	*Good Friday 29/03/2024*
					7.2	Refraction at a spherical surface						
					7.3	Thin lenses						
14	01-05/04/24			L2	7.4	Huygen's Principle	7.1	7.2	7.3	6 Diffraction Grating		
					7.5	Constructive and destructive interferences						
					7.6	Interference of transmitted light through double slits						
06-14/04/24		**MID SEMESTER BREAK (Hari Raya Aidilfitri 10 & 11/04)**										
15	15-19/04/24	7.0	Optics	L3	7.7	Interference of reflected light in thin films	7.4	7.5	7.6			
					7.8	Diffraction by a single slit						
					7.9	Diffraction grating						
16	22-26/04/24	8.0	Wave Properties of Particle	L1	8.1	de Broglie wavelength	7.7	7.8	7.9		UPS 3	
					8.2	Electron diffraction						
17	28/04-03/05/24	9.0	Nuclear and Particle Physics	L1	9.1	Binding energy and mass defect	8.1	8.2	9.1			*Labour Day 1/5/24 Smart Physics Workshop 4/5/24*
					9.2	Radioactivity						
18	06-10/05/24			L2	9.3	Particle accelerator	9.2	9.3	9.4			
					9.4	Fundamental particle						
13-17/05/24		**Revision Week**										
20-28/05/24		**PSPM 2 - Peperiksaan Semester Program Matrikulasi 2 (Wesak Day 22/05)**										

Prepared by:

MOHD AIMAN BIN MOHD ADLI
KETUA UNIT FIZIK
KOLEJ MATRIKULASI SARAWAK
KEMENTERIAN PENDIDIKAN MALAYSIA

Endorsed by:

MISINAH BT MAHAMAD FADZIL
KETUA JABATAN SAINS
KOLEJ MATRIKULASI SARAWAK
KEMENTERIAN PENDIDIKAN MALAYSIA

PHYSICS 1 SP015 (SEMESTER 1) **KOLEJ MATRIKULASI SARAWAK**
RANCANGAN PENGAJARAN SEMESTER **SESSION 2023/2024**

Week	Date	Topic	Lecture	Topic	Tutorial	Exp	Practical	UPS / Assignment	Note
1	17/07/2023 - 21/07/2023	1	Physical Quantities and Measurements	1.1	Dimensions Of Physical Quantities				Awal Muharram/Maal Hijrah 1444H (19/7/2023) Sarawak Day (22/7/2023)
				1.2	Scalars And Vectors				
				1.3	Significant Figures and Uncertainties Analysis				
2	24/07/2023 - 28/07/2023	2	Kinematics Of Motions	2.1	Linear Motion		Introduction to Laboratory Skills and Safety		
				2.2	Uniformly Accelerated Motion				
3	31/07/2023 - 04/08/2023	2	Kinematics Of Motions	2.2	Uniformly Accelerated Motion	1	Measurement and Uncertainty		
		3	Dynamics Of Linear Motion	2.3	Projectile Motion				
				2.3	Projectile Motion				
4	07/08/2023 - 11/08/2023	3	Dynamics Of Linear Motion	3.1	Momentum And Impulse	2	Free Fall and Projectile Motion		
				3.2	Conservation Of Linear Momentum				
5	14/08/2023 - 18/08/2023	4	Work, Energy and Power	3.3	Basic Of Forces and Free Body Diagram				
				3.4	Newton's Laws of Motion				
6	21/08/2023 - 25/08/2023	4	Work, Energy and Power	4.1	Work	3	Energy		
		5	Circular Motion	4.2	Energy And Conservation of Energy				
7	28/08/2023 - 01/09/2023	5	Circular Motion	4.3	Power	4	Rotational Motion of Rigid Body	UPS1	National Day (31/8/2023)
		6	Rotation Of Rigid Body						
8	04/09/2023 - 08/09/2023	6	Rotation Of Rigid Body	5.1	Parameters In Circular Motion				
				5.2	Uniform Circular Motion				
				5.3	Centripetal Force				
09/09/23 – 17/09/23			***MID SEMESTER BREAK***						Malaysia Day (16/9/2023)
9	18/09/2023 - 22/09/2023	7	Oscillations And Waves	6.1	Rotational Kinematics	5	Simple Harmonic Motion	Assignment Handout	
				6.2	Equilibrium Of a Uniform Rigid Body				
10	25/09/2023 - 29/09/2023	7	Oscillations And Waves	6.3	Rotational Dynamics				Prophet Muhammad S.A.W Birthday (28/9/2023)
				6.4	Conservation Of Angular Momentum				

11	02/10/2023 - 06/10/2023	7	Oscillations And Waves	7.1	Kinematics Of Simple Harmonic Motion	6	Standing Waves	Assignment Deadline UPS2	
				7.2	Graphs Of Simple Harmonic Motion				
				7.3	Period Of Simple Harmonic Motion				
12	09/10/2023 - 13/10/2023	7	Oscillations And Waves	7.4	Properties Of Waves				Sarawak Governor's Birthday (14/10/2023)
		8	Physics Of Matter	7.5	Superposition Of Waves				
13	16/10/2023 - 20/10/2023	8	Physics Of Matter	7.6	Application Of Standing Waves		Lab Test (Group A)		
14	23/10/2023 - 27/10/2023	8	Physics Of Matter	7.7	Doppler Effect		Lab Test (Group B)		
15	30/10/2023 - 03/11/2023	8	Physics Of Matter	8.1	Stress And Strain			UPS3	
				8.2	Young's Modulus				
16	06/11/2023 - 10/11/2023	9	Kinetic Theory of Gases and Thermodynamics	8.3	Heat Conduction				
				8.3	Heat Conduction				
				8.4	Thermal Expansion				
17	13/11/2023 - 17/11/2023	9	Kinetic Theory of Gases and Thermodynamics	9.1	Kinetic Theory of Gases				
				9.2	Molecular Kinetic Energy and Internal Energy				
18	20/11/2023 - 24/11/2023	9	Kinetic Theory of Gases and Thermodynamics	9.3	First Law of Thermodynamics				
				9.4	Thermodynamic Processes				
				9.5	Thermodynamic Work				
25/11/23 – 03/12/23			**Revision Week**						
04/12/23 – 12/12/23			**PSPM1**						
13/12/23 – 26/12/23			**Semester Break**						Christmas (25/12/2023)

Subject to changes** ***Effective date: 17/7/2023

Prepared by:

MOHD AIMAN BIN MOHD ADLI
KETUA UNIT FIZIK
KOLEJ MATRIKULASI SARAWAK
KEMENTERIAN PENDIDIKAN MALAYSIA

Endorsed by:

MISINAH BT MAHAMAD FADZIL
KETUA JABATAN SAINS
KOLEJ MATRIKULASI SARAWAK
KEMENTERIAN PENDIDIKAN MALAYSIA