KOLEJ MATRIKULASI SARAWAK

PHYSICS 1 SP015 (SEMESTER 1) **RANCANGAN PENGAJARAN SEMESTER** **SESSION 2022/2023**

Week	Date	Topic	Lecture	Topic	Tutorial	Exp	Practical	UPS	Note
1	01/08/2022 - 05/08/2022	1	Physical Quantities And Measurements	1.1	Dimensions Of Physical Quantities				
				1.2	Scalars And Vectors				
				1.3	Significant Figures And Uncertainties Analysis				
2	08/08/2022 - 12/08/2022	2	Kinematics Of Motions	2.1	Linear Motion		Introduction to Laboratory Skills and Safety		
				2.2	Uniformly Accelerated Motion				
3	15/08/2022 - 19/08/2022	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	22/08/2022 - 26/08/2022	3	Dynamics Of Linear Motion	3.1	Momentum And Impulse	2	Free Fall and Projectile Motion		
				3.2	Conservation Of Linear Momentum				
5	29/08/2022 - 02/09/2022	4	Work, Energy And Power	3.3	Basic Of Forces And Free Body Diagram				National Day 31/8/2022 (Wednesday)
				3.4	Newton's Laws Of Motion				
05/09/2022 - 09/09/2022			***MID SEMESTER BREAK***						
6	12/09/2022 - 16/09/2022	4	Work, Energy And Power	4.1	Work	3	Energy		Hari Malaysia 16/9/2022 (Friday)
		5	Circular Motion	4.2	Energy And Conservation Of Energy				
7	12/09/2022 - 16/09/2022	5	Circular Motion	4.3	Power	4	Rotational Motion of Rigid Body	UPS1	
		6	Rotation Of Rigid Body						
8	19/09/2022 - 23/09/2022	6	Rotation Of Rigid Body	5.1	Parameters In Circular Motion				
				5.2	Uniform Circular Motion				
				5.3	Centripetal Force				
9	26/09/2022 - 30/09/2022	7	Oscillations And Waves	6.1	Rotational Kinematics	5	Rotational Motion of Rigid Body		
				6.2	Equilibrium Of A Uniform Rigid Body				
10	10/10/2022 - 14/10/2022	7	Oscillations And Waves	6.3	Rotational Dynamics				
				6.4	Conservation Of Angular Momentum				
11	17/10/2022 - 21/10/2022	7	Oscillations And Waves	7.1	Kinematics Of Simple Harmonic Motion	6	Standing Waves	UPS2	
				7.2	Graphs Of Simple Harmonic Motion				
				7.3	Period Of Simple Harmonic Motion				

12	24/10/2022 - 28/10/2022	7	Oscillations And Waves	7.4	Properties Of Waves				
		8	Physics Of Matter	7.5	Superposition Of Waves				
13	31/10/2022 - 04/11/2022	8	Physics Of Matter	7.6	Application Of Standing Waves		Lab Test (Group A)		
14	07/11/2022 - 11/11/2022	8	Physics Of Matter	7.7	Doppler Effect		Lab Test (Group B)		
15	14/11/2022 - 18/11/2022	8	Physics Of Matter	8.1	Stress And Strain			UPS3	
				8.2	Young's Modulus				
16	21/11/2022 - 25/11/2022	9	Kinetic Theory Of Gases And Thermodynamics	8.3	Heat Conduction				
				8.3	Heat Conduction				
				8.4	Thermal Expansion				
17	28/11/2022 - 02/12/2022	9	Kinetic Theory Of Gases And Thermodynamics	9.1	Kinetic Theory Of Gases				
				9.2	Molecular Kinetic Energy And Internal Energy				
18	05/12/2022 - 09/12/2022	10	Kinetic Theory Of Gases And Thermodynamics	9.3	First Law Of Thermodynamics				
				9.4	Thermodynamic Processes				
				9.5	Thermodynamic Work				
10/12/2022 - 14/12/2022		**Revision Week**							
15/12/2022 - 22/12/2022		**PS1**							
23/12/2022 - 01/01/2023		**Cuti Semester**							

Subject to changes **Effective date: **28/07/2022***

Prepared by:

(MOHD AIMAN BIN MOHD ADLI)
Ketua Unit Fizik
Kolej Matrikulasi Sarawak

Checked by:

(MISINAH BINTI MAHAMAD FADZIL)
Ketua Jabatan Sains
Kolej Matrikulasi Sarawak

KOLEJ MATRIKULASI SARAWAK

PHYSICS 2 SP025 (SEMESTER 2) **RANCANGAN PENGAJARAN SEMESTER** **SESSION 2022/2023**

Week	Date	Topic	Lecture	Topic	Tutorial	Exp	Practical	Assessment	Notes
1	02/01 – 06/01/23	1	Electrostatics	1.1	Coulomb's Law				
				1.2	Electric field				
				1.3	Electric potential				
2	09/01 – 13/01/23	1	Electrostatics	1.4	Charge in a uniform electric field	1	Capacitor		
				2.1	Capacitance and capacitors in series and parallel				
				2.2	Charging and discharging capacitors				
3	16/01 – 20/01/23	2	Capacitor and Dielectrics	2.3	Capacitors with dielectrics				***Chinese New Year 20 - 24/01/2023***
				2.3	Capacitors with dielectrics				
				3.1	Electrical current				
4	23/01 – 27/01/23	2	Capacitor and Dielectrics	3.2	Ohm's Law and resistivity				
				3.3	Variation of resistance with temperature				
				3.4	Electromotive force (emf), internal resistance and potential difference				
5	30/01 – 03/02/23	3	Electric Current and Direct-Current Circuits	3.5	Resistors in series and parallel	2	Ohm's Law		
				3.6	Kirchhoff's Rules				
				3.6	Kirchhoff's Rules				
6	06/02 – 10/02/23	3	Electric Current and Direct-Current Circuits	3.7	Electrical energy and power	3	Potentiometer		
				3.8	Potential divider				
				3.9	Potentiometer				
7	13/02 – 17/02/23	4	Magnetism	3.9	Potentiometer			***UPS 1***	
				4.1	Magnetic field				
				4.2	Resultant magnetic field produced by current-carrying conductor				
8	20/02 – 24/02/22	4	Magnetism	4.3	Force on a moving charged particle in a uniform magnetic field	4	Magnetic Field		
				4.4	Force on a current carrying conductor in a uniform magnetic field				
				4.5	Forces between two parallel current-carrying conductors				
9	27/02 – 03/03/23	5	Electromagnetic Induction	4.5	Forces between two parallel current-carrying conductors			***Individual Assignment (TOPIC 4)***	
				4.6	Application of motion of charged particle				
				5.1	Magnetic flux				
	04/03 – 12/03/23	***MID SEMESTER BREAK***							
10	13/03 – 17/03/23	5	Electromagnetic Induction	5.2	Induced emf	5	Geometrical Optics		***Individual Assignment Due***
				5.2	Induced emf				
				5.3	Self-inductance				

KOLEJ MATRIKULASI SARAWAK

PHYSICS 2 SP025 (SEMESTER 2) **RANCANGAN PENGAJARAN SEMESTER** **SESSION 2022/2023**

Week	Date	Topic	Lecture	Topic	Tutorial	Exp	Practical	Assessment	Notes
11	20/03 – 24/03/23	6	Alternating Current	5.4	Energy stored in inductor	6	Diffraction Grating (B)		
				5.5	Mutual inductance				
				6.1	Alternating current				
12	27/03 – 31/03/23	6	Alternating Current	6.2	Root mean square (rms)			**UPS 2**	
				6.3	Resistance, reactance and impedance				
				6.3	Resistance, reactance and impedance				
13	03/04 – 07/04/23	7	Optics	6.4	Power and power factor			**Practical Test**	***Good Friday 7/04/2023***
				7.1	Reflection at a spherical surface				
				7.2	Refraction at a spherical surface				
14	10/04 – 14/04/23	7	Optics	7.3	Thin lenses			**Practical Test**	***Smart Physics Workshop 14/04/2023***
				7.4	Huygen's Principle				
				7.5	Constructive and destructive interferences				
15	17/04 – 21/04/23	7	Optics	7.6	Interference of transmitted light through double-slits				***Hari Raya Aidilfitri 20 - 23/4/2023***
				7.6	Interference of transmitted light through double-slits				
				7.7	Interference of reflected light in thin films				
16	24/04 – 28/04/23	8	Wave Properties of Particle	7.7	Interference of reflected light in thin films		Workshop		
				7.8	Diffraction by a single slit				
				7.9	Diffraction grating				
17	01/05 – 05/05/23	9	Nuclear and Particle Physics	8.1	de Broglie wavelength		Workshop	**UPS 3**	***Labour Day 1/05/2022***
				8.2	Electron diffraction				***Wesak Day 4/5/2023***
				9.1	Binding energy and mass defect				
18	08/05 – 12/05/23	9	Nuclear and Particle Physics	9.2	Radioactivity		Workshop		
				9.3	Particle accelerator				
				9.4	Fundamental particle				
13/05 – 17/05/23			**REVISION WEEK**						
18/05 – 25/05/23			**PEPERIKSAAN SEMESTER PROGRAM MATRIKULASI II (PSPM II)**						

Subject to changes

*Effective date: ***02/01/2023***

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