LECTURE	R	SHAFIQ BIN RASULAN							
CODE / CO	URSE	SP015							
WEEK		1							
CHAPTER		Chapter 1: Physical Quantities A	and Measurements						
MODE		Lectures							
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	s			
SLT		F2F (hour):	1	NF2F (hour):	1				
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
Friday 06/08/2021 0800hrs BT1	КЗ	1.3a State the significant figures	a Define dimension. a Define scalar and vector quantities. a State the significant figures of a given number. e State the sources of uncertainty in the results of an experiment.					SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN							
CODE / CO	URSE	SP015								
WEEK		2								
CHAPTER		Chapter 2: Kinematics Of Motio	ns							
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	ermodynamic	s					
SLT		F2F (hour):	(hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS	
Friday 13/08/2021 0800hrs BT1	КЗ	acceleration, average acceleration 2.1b Interpret the physical means	Define instantaneous velocity, average velocity, uniform velocity, instantaneou eleration, average acceleration and uniform acceleration. Interpret the physical meaning of displacement-time, velocity-time and eleration-time graphs. Refer Equation 1.					SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN							
CODE / CO	URSE	SP015								
WEEK		3								
CHAPTER		Chapter 2: Kinematics Of Motio Chapter 3: Dynamics Of Linear								
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	ermodynamic	S					
SLT		F2F (hour):	hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS	
Friday 20/08/2021 0800hrs BT1	К3	angle is zero 3.1a Define momentum and imp	Ba Describe projectile motion launched at an angle, as well as special cases when gle is zero La Define momentum and impulse, refer equation 2 La State the principle of conservation of linear momentum.					SCOR E 6 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN							
CODE / CO	URSE	SP015								
WEEK		4								
CHAPTER		Chapter 3: Dynamics Of Linear	Motion							
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	S				
SLT		F2F (hour):	hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	LEARNING OUTCOME					ECTION	REMARKS	
Friday 27/08/2021 0800hrs BT1	КЗ	3.3a Identify the forces acting or						SCOR E 6 5 5 5 6	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN							
CODE / CO	URSE	SP015								
WEEK		5								
CHAPTER		Chapter 4: Work, Energy And P	ower							
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	s				
SLT		F2F (hour):	nour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	CTION	REMARKS	
Friday 03/09/2021 0800hrs BT1	КЗ	4.1b Define and apply work don 4.2a Define and use: i. Gravitation	a State the physical meaning of dot (scalar) product for work, refer equation 4. to Define and apply work done by a constant force. To Define and use: i. Gravitational potential energy, ii. Elastic potential energy for ng, iii. Kinetic energy. (Refer Equation 5)					SCOR E 5 5 5 5	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN								
CODE / CO	URSE	SP015									
WEEK		6									
CHAPTER		Chapter 4: Work, Energy And Po Chapter 5: Circular Motion	ower								
MODE		Lectures	es e								
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	S					
SLT		F2F (hour):	1	NF2F (hour):	1						
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
Friday 10/09/2021 0800hrs BT1	КЗ	4.2d State and apply work-energ 4.3a Define and use average pow 5.1a Define and use: i. angular d angular velocity, ω	State the principle of conservation of energy. d State and apply work-energy theorem (Refer equation 5) a Define and use average power and instantaneous power (Refer Equation 6) a Define and use: i. angular displacement, θ ii. period, T iii. frequency, f iv. ular velocity, ω a Describe uniform circular motion.					SCOR E 5 5 6	All objectives achieved. Students are able to understand the materials of the		

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LECTURE	R	SHAFIQ BIN RASULAN							
CODE / CO	URSE	SP015							
WEEK		7							
CHAPTER		Chapter 5: Circular Motion Chapter 6: Rotation Of Rigid Bo	dy						
MODE		Lectures							
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	S			
SLT		F2F (hour):	1	NF2F (hour):	1				
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
Friday 17/09/2021 0800hrs BT1	К3	6.1a Define and use: iangular disinstantaneous angular velocity, of instantaneous angular acceleration 6.2a State the physical meaning 9) 6.2b Define and apply torque.	Explain centripetal acceleration and centripetal force (Refer equation 7). Define and use: iangular displacement, θ ; ii. average angular velocity, ω av, iii. antaneous angular velocity, ω ; iv. average angular acceleration, α av; and v. antaneous angular acceleration, α . State the physical meaning of cross (vector) product for torque (Refer equation Define and apply torque.					SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURE	R	SHAFIQ BIN RASULAN							
CODE / CO	URSE	SP015							
WEEK		8							
CHAPTER		Chapter 6: Rotation Of Rigid Bo	ody						
MODE		Lectures							
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	s			
SLT		F2F (hour):	1	NF2F (hour):	1				
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
Friday 24/09/2021 0800hrs BT1	К3	6.3d State and use net torque (Re 6.4a Explain and use angular mo	a Define and use moment of inertia (Refer equation 10) d State and use net torque (Refer equation 10) a Explain and use angular momentum (Refer equation 11) o State and use principle of conservation of angular momentum.					SCOR E 6 6 6 6 5	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN								
CODE / CO	URSE	SP015									
WEEK		9									
CHAPTER		Chapter 7: Oscillations And Wa	ves								
MODE		Lectures									
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	S					
SLT		F2F (hour):	1	NF2F (hour):	1						
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS		
Friday 01/10/2021 0800hrs BT1	КЗ	7.1a Explain SHM. 7.1d Emphasise the relationship	n Explain SHM. I Emphasise the relationship between total SHM energy and amplitude.					SCOR E 6 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURE	R	SHAFIQ BIN RASULAN							
CODE / CO	URSE	SP015							
WEEK		10							
CHAPTER		Chapter 7: Oscillations And Wav	ves						
MODE		Lectures							
CLO		CLO1: Describe basic concepts	of mechanics, wave	ermodynamic	s				
SLT		F2F (hour):	(hour): 1 NF2F (hour): 1						
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
Friday 14/10/2021 0800hrs BT1	КЗ		la Define wavelength. lb Define and use wave number (Refer equation 14) ld Distinguish between particle vibrational velocity and wave propagation velocity.					5 5 5 6 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURE	R	SHAFIQ BIN RASULAN	BIN RASULAN							
CODE / CO	URSE	SP015								
WEEK		11								
CHAPTER		Chapter 7: Oscillations And Wav	ves							
MODE		Lectures								
CLO		CLO1: Describe basic concepts of	of mechanics, wave	e, matters, heat and the	ermodynamic	S				
SLT		F2F (hour):	(hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS	
Friday 21/10/2021 0800hrs BT1	К3	interferences.	a State the principle of superposition of waves for the constructive and destructive erferences. ic Compare between progressive waves and standing waves.					5 5 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	3	SHAFIQ BIN RASULAN								
CODE / CO	URSE	SP015								
WEEK		12								
CHAPTER		Chapter 7: Oscillations And Wav Chapter 8: Physics Of Matter	ves							
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	ermodynamics	s					
SLT		F2F (hour):	hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS	
Friday 28/10/2021 0800hrs BT1	КЗ		7a State Doppler Effect for sound waves. 1c Explain elastic and plastic deformations.					5 6 6 6 6	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN	HAFIQ BIN RASULAN							
CODE / CO	URSE	SP015	SP015							
WEEK		13								
CHAPTER		Chapter 8: Physics Of Matter								
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	s				
SLT		F2F (hour):	1	NF2F (hour):	1					
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS	
Friday 04/11/2021 0800hrs BT1	К3	3.2a Define and use Young's Modulus (Refer equation 19)				Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	5 6 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURE	R	SHAFIQ BIN RASULAN									
CODE / CO	URSE	SP015	SP015								
WEEK		14									
CHAPTER		Chapter 8: Physics Of Matter									
MODE		Lectures									
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	s					
SLT		F2F (hour):	1	NF2F (hour):	1						
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
Friday 11/11/2021 0800hrs BT1	К3	8.3a Define heat conduction.				Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	SCOR E 6 6 6 6 6	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURE	R	SHAFIQ BIN RASULAN	HAFIQ BIN RASULAN								
CODE / CO	URSE	SP015	P015								
WEEK		15									
CHAPTER		Chapter 8: Physics Of Matter									
MODE		Lectures									
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	S					
SLT		F2F (hour):	1	NF2F (hour):	1						
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
Friday 18/11/2021 0800hrs BT1	КЗ	8.4a Define coefficient of linear expansion, γ	me	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	5 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.				

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LECTURE	R	SHAFIQ BIN RASULAN								
CODE / CO	URSE	SP015								
WEEK		16								
CHAPTER		Chapter 9: Kinetic Theory Of Ga	ases And Thermody	ynamics						
MODE		Lectures								
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and the	ermodynamic	S				
SLT		F2F (hour):	F2F (hour): 1 NF2F (hour): 1							
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	OME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS	
Friday 25/11/2021 0800hrs BT1	КЗ	9.1a State the assumptions of kir 9.1b Describe root mean square 9.2a Explain and use translations 9.2b Define degree of freedom. 9.2c Identify number of degrees polyatomic gas molecules.	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	SCOR E 6 5 5 5	All objectives achieved. Students are able to understand the materials of the topic.				

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LECTURE	R	SHAFIQ BIN RASULAN									
CODE / CO	URSE	SP015	P015								
WEEK		17									
CHAPTER		Chapter 9: Kinetic Theory Of Ga	ases And Thermody	ynamics							
MODE		Lectures									
CLO		CLO1: Describe basic concepts	of mechanics, wave	e, matters, heat and th	ermodynamic	es .					
SLT		F2F (hour):	F2F (hour): 1 NF2F (hour): 1								
DAY DATE TIME VENUE	CLASS	LE	ARNING OUTCO	ОМЕ		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
Friday 02/12/2021 0800hrs BT1	КЗ	9.2d State the principle of equipa 9.2e Discuss internal energy of g 9.3a State the First Law of Therr 9.4a Define the following thermore Isobaric and iv. Adiabatic. 9.4b Analyse P-V graph for all the	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 5 6 5 5 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.					

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LECTURER	SHAFIQ BIN RASULA	.N				
CODE / COURSE	SP015					
WEEK	1					
CHAPTER	Chapter: 1: PHYSICAL Q	UANTITIES AND ME	ASUREMEN'	TS		
MODE	TUTORIAL					
CLO	CLO2: Solve problems rela	ated to mechanics, wav	es, matter, hea	nt and thermodyna	mics.	
SLT	F2F (hour):	NF2F (hour):	1			
CLASS (DAY, TIME, VENUE) DATE	LEARN	ING OUTCOME		T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 02/08/2021(T5A); 02/08/2021(T5B); 03/08/2021(T6A); 03/08/2021(T6A)	1a) Define dimension. 1b) Determine the dimensions of derived quantities. 1c) Verify the homogeneity of equations using dimensional inalysis.			Discussions Thought Experiments Activities	ITEM SCOR *Appe E	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFI	Q BIN RASULAN	I					
CODE / COURSE	SP015							
WEEK	1							
CHAPTER	Chapter:	1: PHYSICAL QU	ANTITIES AND ME	ASUREMEN'	TS			
MODE	TUTORI	AL						
CLO	CLO2: S	olve problems relat	ed to mechanics, wav	es, matter, hea	t and thermodyna	mics.		
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 03/08/2021(T5A); 03/08/2021(T5B); 04/08/2021(T6A); 04/08/2021(T6A)	1.2b) Reso axes).	2c) Determine resultant of vectors. (remarks: limit to three vectors			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 5 6 6 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015						
WEEK	1						
CHAPTER	Chapter:	1: PHYSICAL QU	ANTITIES AND ME	ASUREMEN	TS		
MODE	TUTORI	AL					
CLO	CLO2: S	olve problems relate	ed to mechanics, wav	es, matter, hea	at and thermodyna	mics.	
SLT	F2F (hour):	1	NF2F (hour):	1			
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 05/08/2021(T5A); 05/08/2021(T5B); 05/08/2021(T6A); 05/08/2021(T6A)	1.3a) State the significant figures of a given number. 1.3b) Use the rules for stating the significant figures at the end of a calculation (addition, subtraction, multiplication or division). 1.3c) Determine the uncertainty for average value and derived quantities. 1.3d) Calculate basic combination (propagation) of uncertainties. 1.3e) State the sources of uncertainty in the results of an experiment. 1.3f) Draw a linear graph and determine its gradient, y-intercept and its respective uncertainties. (remarks: using Least Square Method LSM to determine uncertainties) 1.3g) Measure and determine the uncertainty of physical quantities. (Experiment 1: Measurement and uncertainty)			Discussions Thought Experiments Activities	ITEM SCOR *Appe ndix	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIQ BIN RASULAN			
CODE / COURSE	SP015			
WEEK	2			
CHAPTER	Chapter: 2: KINEMATICS OF MOTIONS			
MODE	TUTORIAL			
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat	and thermodynan	nics.	
SLT	F2F (hour): 1 NF2F (hour): 1			
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 09/08/2021(T5A); 09/08/2021(T5B); 10/08/2021(T6A); 10/08/2021(T6A)	2.1a) Define instantaneous velocity, average velocity, uniform velocity, instantaneous acceleration, average acceleration and uniform acceleration. 2.1b) Interpret the physical meaning of displacement-time, velocity-time and acceleration-time graphs. 2.1c) Determine the distance travelled, displacement, velocity and acceleration from appropriate graphs.	Discussions Thought Experiments Activities	ITEM SCOR *Appe E	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	URER	SHAFIQ BIN	N RASULAN	I					
CODE / COURSE	/ COURSE	SP015							
WEEK		2							
CHAPTER	TER	Chapter: 2: KI	NEMATICS (OF MOTIONS					
MODE]	TUTORIAL							
CLO		CLO2: Solve I	problems relate	ed to mechanics, wav	es, matter, hea	t and thermodyna	mics.		
SLT		F2F (hour):		NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE	AY, TIME, VENUE)		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 10/08/2021(T5A); 10/08/2021(T5B); 11/08/2021(T6A); 11/08/2021(T6A)	s, MF), T6A(WED, 0800 hrs, T6B(WED, 0900 hrs, BT1) 021(T5A); 10/08/2021(T5B);	2.2a) Derive and acceleration (Re		ns of motion with unifor	m	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 5 6 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIQ BIN RASULAN			
CODE / COURSE	SP015			
WEEK	2			
CHAPTER	Chapter: 2: KINEMATICS OF MOTIONS			
MODE	TUTORIAL			
CLO	CLO2: Solve problems related to mechanics, waves	s, matter, heat and thermodyna	mics.	
SLT	F2F (hour): NF2F (hour):	1		
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 12/08/2021(T5A); 12/08/2021(T5B); 12/08/2021(T6A); 12/08/2021(T6A)	2.2a) Derive and apply equations of motion with uniform acceleration (Refer equation 1)	Discussions Thought Experiments Activities	ITEM SCOR *Appe E ndix	All objectives achieved. Students are able to understand the materials of the topic.

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Sarawak Matriculation College

Date:

Endorsed by

MARY GWADOLINE YUSUS

Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFIQ BIN RASULAN	
CODE / COURSE	SP015	
WEEK	3	
CHAPTER	Chapter: 2: KINEMATICS OF MOTIONS	
MODE	TUTORIAL	
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and	d thermodynamics.
SLT	F2F 1 NF2F (hour): 1	
CLASS (DAY, TIME, VENUE) DATE		T&L TRATEGIE REFLECTION REMARKS & TOOLS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 16/08/2021(T5A); 16/08/2021(T5B); 17/08/2021(T6A); 17/08/2021(T6A)	2.2a) Derive and apply equations of motion with uniform acceleration (Refer equation 1)	Discussions Thought Experiments Activities TREM SCOR *Appe E ndix i 5 ii 6 iii 6 iv 6 v 5 All objectives achieved. Students are able to understand the materials of the topic.

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SHAFIQ BIN RASULAN

Physics Lecturer

Sarawak Matriculation College

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LECTURER	SHAFI	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	3									
CHAPTER	Chapter:	2: KINEMATICS (OF MOTIONS							
MODE	TUTORI	AL								
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS		
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 17/08/2021(T5A); 17/08/2021(T5B); 18/08/2021(T6A); 18/08/2021(T6A)	special ca 2.3b) Solv 2.3c) Dete	2.3a) Describe projectile motion launched at an angle, O as well as special cases when 0=0° 2.3b) Solve problems related to projectile motion. 2.3c) Determine the acceleration due to gravity, g using free fall and projectile motion. (Experiment 2: Free fall and projectile motion)				ITEM *Appe ndix i ii iii v v	SCOR E 6 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFI	SHAFIQ BIN RASULAN							
CODE / COURSE	SP015	P015							
WEEK	3								
CHAPTER	Chapter:	2: KINEMATICS (OF MOTIONS						
MODE	TUTORI	AL							
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour):	1							
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLECT	TION	REMARKS	
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 19/08/2021(T5A); 19/08/2021(T5B); 19/08/2021(T6A); 19/08/2021(T6A)	special case 2.3b) Solve 2.3c) Dete	2.3a) Describe projectile motion launched at an angle, O as well as special cases when 0=0° 2.3b) Solve problems related to projectile motion. 2.3c) Determine the acceleration due to gravity, g using free fall and projectile motion. (Experiment 2: Free fall and projectile motion)				ITEM S *Appe ndix i ii iii v v	6 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIQ BIN	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	4									
CHAPTER	Chapter: 3: DY	NAMICS OF	LINEAR MOTION							
MODE	TUTORIAL									
CLO	CLO2: Solve pi	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 23/08/2021(T5A); 23/08/2021(T5B); 24/08/2021(T6A); 24/08/2021(T6A)	3.1b) Solve 1D p	3.1a) Define momentum and impulse (Refer Equation 2) 3.1b) Solve 1D problems related to impulse and impulse-momentum heorem (Refer Equation 2)				ITEM *Appe ndix i ii iii v	SCOR E 5 6 5 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFI	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	4									
CHAPTER	Chapter:	3: DYNAMICS OF	LINEAR MOTION							
MODE	TUTORI	AL								
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	NEZE (hour):								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CTION	REMARKS		
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 24/08/2021(T5A); 24/08/2021(T5B); 25/08/2021(T6A);	3.1c) Use	3.1c) Use F-t graph to determine impulse.				ITEM *Appe ndix i ii iii v v	SCOR E 6 5 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIQ BIN RASULAN	SHAFIQ BIN RASULAN							
CODE / COURSE	SP015	P015							
WEEK	4								
CHAPTER	Chapter: 3: DYNAMICS OF LINEAR	MOTION							
MODE	TUTORIAL								
CLO	CLO2: Solve problems related to mecha	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour): 1 NF2F (ho	NEZE (hour):							
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCO	OME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS				
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 26/08/2021(T5A); 26/08/2021(T5B); 26/08/2021(T6A); 26/08/2021(T6A)	3.2a) State the principle of conservation of l 3.2b) Apply the principle of conservation of and inelastic collisions in 2D collisions. 3.2c) Differentiate elastic and inelastic collisionilarities & differences)	momentum in elastic	Discussions Thought Experiments Activities	ITEM SCOR *Appe E i	All objectives achieved. Students are able to understand the materials of the topic.				

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LECTURER	SHAFI	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	5									
CHAPTER	Chapter:	3: DYNAMICS OF	LINEAR MOTION							
MODE	TUTORI	AL								
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1 NEZE (hour): 1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 30/08/2021(T5A); 30/08/2021(T5B); 31/08/2021(T6A); 31/08/2021(T6A)	Weight, V force (pul 3.3b) Sket	3.3a) Identify the forces acting on a body in different situations – Weight, W; Tension, T; Normal force, N; Friction, f; and External force (pull or push), F. 3.3b) Sketch free body diagram. 3.3c) Determine static and kinetic friction (Refer Equation 3)				ITEM *Appe ndix i ii iii v v	SCOR E 6 6 6 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFI	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	5									
CHAPTER	Chapter:	3: DYNAMICS OF	LINEAR MOTION							
MODE	TUTORI	AL								
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CTION	REMARKS		
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 31/08/2021(T5A); 31/08/2021(T5B); 01/09/2021(T6A); 01/09/2021(T6A)	3.4b) App	3.4a) State Newton's laws of motion. 3.4b) Apply Newton's laws of motion – Include static and dynamic equilibrium for Newton's first law motion				ITEM *Appe ndix i ii iii v v	SCOR E 5 5 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015							
WEEK	5								
CHAPTER	Chapter: 3: DYNAMICS OF LINEAR MOTION								
MODE	TUTORIAL								
CLO	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour): 1 NF2F (hour): 1								
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS								
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 02/09/2021(T5A); 02/09/2021(T5B); 02/09/2021(T6A); 02/09/2021(T6A)	3.4a) State Newton's laws of motion. 3.4b) Apply Newton's laws of motion – Include static and dynamic equilibrium for Newton's first law motion Thought Experiments Activities Thought Experiments Activities Trought Experiments ii 5 iii 5 iv 6 v 5	to							

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LECTURER	SHAFIQ BIN RASULAN								
CODE / COURSE	P015								
WEEK									
CHAPTER	Chapter: 4: WORK, ENERGY AND POWER								
MODE	TUTORIAL								
CLO	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	2F our): 1 NF2F (hour): 1								
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME T&L STRATEGIE S & TOOLS	REFLECTION REMARKS							
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 06/09/2021(T5A); 06/09/2021(T5B); 07/09/2021(T6A); 07/09/2021(T6A)	Discussions 1.1a) State the physical meaning of dot (scalar) product for work Refer Equation 4) 1.1b) Define and apply work done by a constant force. 1.1c) Determine work done from a force-displacement graph. Activities	ITEM SCOR *Appe E ndix i 5 ii 6 iii 6 iii 6 v 6							

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LECTURER	SHAFIQ BIN RASULAN							
CODE / COURSE	P015							
WEEK	6							
CHAPTER	Chapter: 4: WORK, ENERGY AND POWER							
MODE	TUTORIAL							
CLO	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour): 1							
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS							
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 07/09/2021(T5A); 07/09/2021(T5B); 08/09/2021(T6A); 08/09/2021(T6A)	4.2a) Define and use: Gravitational potential energy, Elastic potential energy for spring, Kinetic energy (Refer Equation 5) 4.2b) State the principle of conservation of energy. 4.2c) Apply the principle of conservation of mechanical energy. d) State and apply work-energy theorem (Refer Equation 5) Thought Experiments Activities Thought Experiments Activities Activities Trem SCOR *Appe B B ON B COR *Appe B O							

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Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFIC	SHAFIQ BIN RASULAN							
CODE / COURSE	SP015	P015							
WEEK	6								
CHAPTER	Chapter:	4: WORK, ENERG	GY AND POWER						
MODE	TUTORI	AL							
CLO	CLO2: S	O2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour):	1							
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS	
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 09/09/2021(T5A); 09/09/2021(T5B); 09/09/2021(T6A); 09/09/2021(T6A)	energy for 4.2b) Stat 4.2c) App	4.2a) Define and use: Gravitational potential energy, Elastic potential energy for spring, Kinetic energy (Refer Equation 5) 4.2b) State the principle of conservation of energy. 4.2c) Apply the principle of conservation of mechanical energy. d) State and apply work-energy theorem (Refer Equation 5)				ITEM *Appe ndix i ii iii v	SCOR E 6 6 6 5	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIQ BIN RASULAN				
CODE / COURSE	SP015				
WEEK	7				
CHAPTER	hapter: 4: WORK, ENERGY AND POWER				
MODE	TUTORIAL				
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.				
SLT	F2F (hour): 1 NF2F (hour): 1				
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS				
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 13/09/2021(T5A); 13/09/2021(T5B); 14/09/2021(T6A); 14/09/2021(T6A)	4.3a) Define and use average power, and instantaneous power (Refer Equation 6) 4.3b) Verify the law of conservation of energy. (Experiment 3: Energy) Discussions Thought Experiments Experiments Activities Thought Experiments Activities Thought Experiments Activities Thought Experiments ii 5 iii 6 iv 5 v 5 v 5				

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LECTURER	CR SI	SHAFIQ BIN RASU	JLAN				
CODE / COURSE	DURSE SP	SP015					
WEEK	7	,					
CHAPTER	Ch	Chapter: 4: WORK, El	napter: 4: WORK, ENERGY AND POWER				
MODE	TU	TUTORIAL	TORIAL				
CLO	CI	CLO2: Solve problems	s related to mechanics, wav	es, matter, hea	t and thermodynar	nics.	
SLT		F2F hour):	NF2F (hour):	1			
CLASS (DAY, TIME, VENUE) DATE	TIME, VENUE)	LEA	ARNING OUTCOME		T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 14/09/2021(T5A); 14/09/2021(T5B); 15/09/2021(T6A);	F), T6A(WED, 0800 hrs, (WED, 0900 hrs, BT1) Eq 4.3 T5A); 14/09/2021(T5B);	Equation 6)	rage power, and instantaneous onservation of energy. (Experi		Discussions Thought Experiments Activities	ITEM SCOR	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015					
WEEK						
CHAPTER	Chapter: 4: WORK, ENERGY AND POWER	napter: 4: WORK, ENERGY AND POWER				
MODE	TUTORIAL					
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.					
SLT	F2F (hour): 1 NF2F (hour): 1					
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME T&L STRATEGIE S & TOOLS	REFLECTION REMARKS				
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 16/09/2021(T5A); 16/09/2021(T5B); 16/09/2021(T6A); 16/09/2021(T6A)	4.3a) Define and use average power, and instantaneous power (Refer Equation 6) 4.3b) Verify the law of conservation of energy. (Experiment 3: Experiments Energy) Activities	ITEM SCOR *Appe E ndix i 5 ii 5 iii 6 iv 6 v 6				

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LECTURER	SHAFIQ BIN RASULAN				
CODE / COURSE	SP015				
WEEK	3				
CHAPTER	hapter: 5: CIRCULAR MOTION				
MODE	ΓUTORIAL	JTORIAL			
CLO	CLO2: Solve problems related to mechanics, waves, matter, he	eat and thermodyna	mics.		
SLT	F2F hour): 1 NF2F (hour): 1				
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS	
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 20/09/2021(T5A); 20/09/2021(T5B); 21/09/2021(T6A); 21/09/2021(T6A)	5.1a) Define and use – angular displacement, period, frequency, angular velocity	Discussions Thought Experiments Activities	ITEM SCOR *Appe E	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIG	Q BIN RASULAN	I					
CODE / COURSE	SP015							
WEEK	8							
CHAPTER	Chapter:	apter: 5: CIRCULAR MOTION						
MODE	TUTORI	TORIAL						
CLO	CLO2: S	olve problems relate	ed to mechanics, wav	es, matter, hea	t and thermodyna	mics.		
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 21/09/2021(T5A); 21/09/2021(T5B); 22/09/2021(T6A)		cribe uniform circular vert units between deş	motion. grees, radian, and revolu	ition or	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 5 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFI	Q BIN RASULAN	1					
CODE / COURSE	SP015							
WEEK	8							
CHAPTER	Chapter:	apter: 5: CIRCULAR MOTION						
MODE	TUTORI	AL						
CLO	CLO2: S	olve problems relat	ed to mechanics, wav	es, matter, hea	t and thermodyna	mics.		
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 23/09/2021(T5A); 23/09/2021(T5B); 23/09/2021(T6A); 23/09/2021(T6A)	Equation 5.3b) Solve motion ca	7) ve problems related to	ration and centripetal fo centripetal force for un ar motion, vertical circul ked curve	iform circular	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIG	Q BIN RASULAN						
CODE / COURSE	SP015							
WEEK	9							
CHAPTER	Chapter:	hapter: 6: ROTATION OF RIGID BODY						
MODE	TUTORI	TORIAL						
CLO	CLO2: So	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.						
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 27/09/2021(T5A); 27/09/2021(T5B); 28/09/2021(T6A); 28/09/2021(T6A)	velocity, in acceleration 6.1b) Anal correspond 6.1c) Solv	nstantaneous angular on, instantaneous angu lyse parameters in rot ding quantities in line	displacement, average a velocity, average angula ular acceleration. (Refer ational motion with thei ar motion (Refer Equat otational motion with co ation 8)	er Equation 8) r ion 8)	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIQ BIN RASULAN
CODE / COURSE	SP015
WEEK	9
CHAPTER	Chapter: 6: ROTATION OF RIGID BODY
MODE	TUTORIAL
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.
SLT	F2F (hour): 1 NF2F (hour): 1
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 28/09/2021(T5A); 28/09/2021(T5B); 29/09/2021(T6A)	(Refer Equation 9)ndixAll objectives achieved.6.2b) Define and apply torque.Thoughti56.2c) State conditions for equilibrium of rigid bodyExperimentsii6

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LECTURER	SHAFIQ BIN RASU	JLAN				
CODE / COURSE	SP015					
WEEK	9					
CHAPTER	Chapter: 6: ROTATION	napter: 6: ROTATION OF RIGID BODY				
MODE	TUTORIAL	TORIAL				
CLO	CLO2: Solve problems	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.				
SLT	F2F (hour):	NF2F (hour):	1			
CLASS (DAY, TIME, VENUE) DATE	LEAI	RNING OUTCOME		T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 30/09/2021(T5A); 30/09/2021(T5B); 30/09/2021(T6A)	(Refer Equation 9) 6.2b) Define and apply to 6.2c) State conditions for		-	Discussions Thought Experiments Activities	ITEM SCOR	All objectives achieved. Students are able to understand the materials of the topic.

Prepared by,

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Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFIQ	BIN RASULAN						
CODE / COURSE	SP015							
WEEK	10							
CHAPTER	Chapter: 6	napter: 6: ROTATION OF RIGID BODY						
MODE	TUTORIA	ΛL						
CLO	CLO2: Sol	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.						
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	IG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 11/10/2021(T5A); 11/10/2021(T5B); 12/10/2021(T6A); 12/10/2021(T6A)	6.3b) Use the cylinder, rin 6.3c) Determ	ne moment of inertiang, disc, and rod). mine the moment of motion of rigid body	f inertia (Refer Equatior of a uniform rigid body inertia of a flywheel. (E) d) State and use net to	x. (sphere, Experiment 4:	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii	SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFI	Q BIN RASULAN	1					
CODE / COURSE	SP015							
WEEK	10							
CHAPTER	Chapter:	napter: 6: ROTATION OF RIGID BODY						
MODE	TUTOR	TORIAL						
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.						
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 12/10/2021(T5A); 12/10/2021(T5B); 13/10/2021(T6A); 13/10/2021(T6A)	6.4a) Exp		nomentum (Refer Equat conservation of angular		Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 6 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.

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Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015					
WEEK	10					
CHAPTER	Chapter: 6: ROTATION OF RIGID BOD	napter: 6: ROTATION OF RIGID BODY				
MODE	TUTORIAL	TORIAL				
CLO	CLO2: Solve problems related to mechan	ics, waves, matter, hea	at and thermodyna	mics.		
SLT	F2F (hour): 1 NF2F (hou	r): 1				
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCO	ME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS	
T5A, T5B, T6A, T6B(THUR,			Discussions	ITEM SCOR *Appe E		

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LECTURER	SHAFIQ BIN RASULAN	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015						
WEEK	11						
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES						
MODE	TUTORIAL						
CLO	CLO2: Solve problems related to mechanics, waves, matter, hea	t and thermodynai	mics.				
SLT	F2F (hour): 1 NF2F (hour): 1						
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS			
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 18/10/2021(T5A); 18/10/2021(T5B); 19/10/2021(T6A); 19/10/2021(T6A)	7.1a) Explain SHM. 7.1b) Apply SHM displacement equation (Refer Equation 12) 7.1c) Derive (without calculus) and use equations – velocity, acceleration, kinetic energy, and potential energy (Refer Equation 12) 7.1d) Emphasise the relationship between total SHM energy and amplitude. 7.1e) Apply equations of velocity, acceleration, kinetic energy and potential energy for SHM.	Discussions Thought Experiments Activities	ITEM SCOR *Appe E	All objectives achieved. Students are able to understand the materials of the topic.			

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LECTURER	SHAFIQ BIN RAS	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015						
WEEK	11						
CHAPTER	Chapter: 7: OSCILLA	ATIONS AND WAVES					
MODE	TUTORIAL						
CLO	CLO2: Solve problem	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.					
SLT	F2F (hour):	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE	LE	ARNING OUTCOME		T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS	
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 19/10/2021(T5A); 19/10/2021(T5B); 20/10/2021(T6A); 20/10/2021(T6A)		alyse the following graphs – displacement-time, velocity- eleration-time and energy-displacement.			ITEM SCOR *Appe E ndix	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN						
CODE / COURSE	SP015							
WEEK	11							
CHAPTER	Chapter:	7: OSCILLATION	S AND WAVES					
MODE	TUTORI	AL						
CLO	CLO2: S	olve problems relat	ed to mechanics, wav	es, matter, hea	at and thermodyna	mics.		
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CCTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 21/10/2021(T5A); 21/10/2021(T5B); 21/10/2021(T6A)	mass-sprii (Refer Eqi 7.3b) Dete pendulum 7.3c) Inve	7.3a) Use expression for period of SHM, for simple pendulum and mass-spring system — Simple pendulum and mass-spring system Refer Equation 13) 7.3b) Determine the acceleration, g due to gravity using simple pendulum.(Experiment 5: SHM) 7.3c) Investigate the effect of large amplitude oscillation to the accuracy of acceleration due to gravity, g obtained from the experiment. (Experiment 5: SHM)			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 5 5 5 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIC	HAFIQ BIN RASULAN						
CODE / COURSE	SP015							
WEEK	12							
CHAPTER	Chapter:	7: OSCILLATION	S AND WAVES					
MODE	TUTORI	AL						
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.						
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 25/10/2021(T5A); 25/10/2021(T5B); 26/10/2021(T6A); 26/10/2021(T6A)	7.4b) Defi 7.4c) Solv Equation 7.4d) Dist propagatio 7.4e) Use 7.4f) Use	7.4a) Define wavelength. 7.4b) Define and use wave number (Refer Equation 14) 7.4c) Solve problems related to equation of progressive wave (Refer Equation 14) 7.4d) Distinguish between particle vibrational velocity and wave propagation velocity. 7.4e) Use particle vibrational velocity (Refer Equation 14) 7.4f) Use wave propagation velocity (Refer Equation 14) 7.4g) Analyse the graphs of – displacement-time and displacement-listance			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii	SCOR E 5 5 6 6	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015					
WEEK	12					
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES					
MODE	TUTORIAL					
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodyna	amics.				
SLT	F2F (hour): 1 NF2F (hour): 1					
CLASS (DAY, TIME, VENUE) DATE	T&L LEARNING OUTCOME STRATEGIE S & TOOLS	REFLECTION REMARKS				
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 26/10/2021(T5A); 26/10/2021(T5B); 27/10/2021(T6A)	 7.5a) State the principle of superposition of waves for the constructive and destructive interferences. 7.5b) Use the standing wave equation (Refer Equation 15) Experiments 	ITEM SCOR *Appe E ndix i 6 ii 5 iii 5 iv 6 v 5 ITEM SCOR All objectives achieved. Students are able to understand the materials of the topic.				

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LECTURER	SHAFIQ BIN RA	SHAFIQ BIN RASULAN						
CODE / COURSE	SP015							
WEEK	12							
CHAPTER	Chapter: 7: OSCIL	LATIONS AND) WAVES					
MODE	TUTORIAL							
CLO	CLO2: Solve prob	ems related to n	nechanics, wav	es, matter, hea	at and thermodyna	mics.		
SLT	F2F (hour):	NF2	F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE	I	EARNING OU	JTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 28/10/2021(T5A); 28/10/2021(T5B); 28/10/2021(T6A); 28/10/2021(T6A)	constructive and dest 7.5b) Use the standing	.5a) State the principle of superposition of waves for the constructive and destructive interferences5b) Use the standing wave equation (Refer Equation 15) .5c) Compare between progressive waves and standing waves.			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 5 6 5 6	All objectives achieved. Students are able to understand the materials of the topic.

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Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFIQ BIN RASULAN	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015						
WEEK	13						
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES						
MODE	TUTORIAL						
CLO	CLO2: Solve problems related to mechanics, waves, matter, h	at and thermodyna	mics.				
SLT	F2F (hour): 1 NF2F (hour): 1						
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME	T&L STRATEGIE S & TOOLS	REFLECTION	REMARKS			
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 01/11/2021(T5A); 01/11/2021(T5B); 02/11/2021(T6A); 02/11/2021(T6A)	7.6a) Solve problems related to the fundamental and overtone frequencies for stretched string and air columns (open and closed end). (Refer Equation 16) 7.6b) Use wave speed in a stretched string (Refer Equation 16) 7.6c) Investigate standing wave formed in a stretched string. (Experiment 6: Standing waves) 7.6d) Determine the mass per unit length of the string. (Experiment 6: Standing waves)	Discussions Thought Experiments Activities	ITEM SCOR *Appe ndix	All objectives achieved. Students are able to understand the materials of the topic.			

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LECTURER	SHAFIC	SHAFIQ BIN RASULAN						
CODE / COURSE	SP015							
WEEK	13							
CHAPTER	Chapter:	7: OSCILLATION	S AND WAVES					
MODE	TUTORI	IAL						
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.						
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 02/11/2021(T5A); 02/11/2021(T5B); 03/11/2021(T6A); 03/11/2021(T6A)	frequencion end). (Ref. 7.6b) Use 7.6c) Inverse (Experiment 7.6d) Determination of the frequencies of the fr	7.6a) Solve problems related to the fundamental and overtone frequencies for stretched string and air columns (open and closed end). (Refer Equation 16) 7.6b) Use wave speed in a stretched string (Refer Equation 16) 7.6c) Investigate standing wave formed in a stretched string. (Experiment 6: Standing waves) 7.6d) Determine the mass per unit length of the string. (Experiment 6: Standing waves)			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 5 6 6	All objectives achieved. Students are able to understand the materials of the topic.

Prepared by,

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LECTURER	SHAFIC	SHAFIQ BIN RASULAN						
CODE / COURSE	SP015							
WEEK	13							
CHAPTER	Chapter:	7: OSCILLATION	S AND WAVES					
MODE	TUTORI	AL						
CLO	CLO2: S	olve problems relat	ed to mechanics, wav	es, matter, hea	at and thermodynai	mics.		
SLT	F2F (hour):	1	NF2F (hour):	1				
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 04/11/2021(T5A); 04/11/2021(T5B); 04/11/2021(T6A); 04/11/2021(T6A)	frequencion end). (Ref. 7.6b) Use 7.6c) Inverse (Experiment 7.6d) Determination of the frequencies of the fr	7.6a) Solve problems related to the fundamental and overtone requencies for stretched string and air columns (open and closed and). (Refer Equation 16) 7.6b) Use wave speed in a stretched string (Refer Equation 16) 7.6c) Investigate standing wave formed in a stretched string. 7.6c) Experiment 6: Standing waves) 7.6d) Determine the mass per unit length of the string. (Experiment 5: Standing waves)				ITEM *Appe ndix i ii iii v	SCOR E 5 5 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.

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LECTURER	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015					
WEEK	14					
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES					
MODE	TUTORIAL					
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.					
SLT	F2F (hour): 1 NF2F (hour): 1					
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS					
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 08/11/2021(T5A); 08/11/2021(T5B); 09/11/2021(T6A); 09/11/2021(T6A)	7.7a) State Doppler Effect for sound waves. 7.7b) Apply Doppler Effect equation for relative motion between source and observer. Limit to stationary observer and moving source, and vice versa. (Refer Equation 17) Thought Experiments Activities Thought Experiments Activities Thought Experiments Activities Thought Experiments Activities Thought Experiments ii 6 iii 6 iv 5 v 5					

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LECTURER	SHAFIQ BIN RASULAN	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015						
WEEK	14						
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES						
MODE	TUTORIAL						
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and	l thermodynamics.					
SLT	F2F (hour): 1 NF2F (hour): 1						
CLASS (DAY, TIME, VENUE) DATE		T&L TRATEGIE REFLECTION REMARKS & TOOLS					
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 09/11/2021(T5A); 09/11/2021(T5B); 10/11/2021(T6A); 10/11/2021(T6A)	7.7a) State Doppler Effect for sound waves. 7.7b) Apply Doppler Effect equation for relative motion between source and observer. Limit to stationary observer and moving source, and vice versa. (Refer Equation 17)	Discussions Thought Experiments Activities TTEM SCOR *Appe E ndix i 5 ii 5 iii 5 iii 5 iv 5 v 5					

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LECTURER	SHAFIQ BIN RASULAN					
CODE / COURSE	SP015					
WEEK	14					
CHAPTER	Chapter: 7: OSCILLATIONS AND WAVES					
MODE	TUTORIAL					
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.					
SLT	F2F (hour): 1					
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS					
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 11/11/2021(T5A); 11/11/2021(T5B); 11/11/2021(T6A); 11/11/2021(T6A)	7.7a) State Doppler Effect for sound waves. 7.7b) Apply Doppler Effect equation for relative motion between source and observer. Limit to stationary observer and moving source, and vice versa. (Refer Equation 17) Discussions Thought Experiments Activities Thought Experiments Activities Thought Experiments Activities Thought Experiments ii 5 iii 5 iv 6 v 5					

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	15	5								
CHAPTER	Chapter:	8: PHYSICS OF M	ATTER							
MODE	TUTORI	AL								
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 15/11/2021(T5A); 15/11/2021(T5B); 16/11/2021(T6A); 16/11/2021(T6A)	compressi 8.1b) Ana tension. 8.1c) Expl	on force. (Refer Equalyse the graph of strestain elastic and plastic	ss-strain, σ & for a meta	l under	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIQ BIN RASULAN								
CODE / COURSE	P015								
WEEK	15								
CHAPTER	Chapter: 8: PHYSICS OF MATTER								
MODE	TUTORIAL								
CLO	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour): 1 NF2F (hour): 1								
CLASS (DAY, TIME, VENUE) DATE	LEARNING OUTCOME STRATEGIE REFLECTION REMARKS S & TOOLS								
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 16/11/2021(T5A); 16/11/2021(T5B); 17/11/2021(T6A);	8.2a) Define and use Young's Modulus (Refer Equation 19) 8.2b) Apply strain energy from force-elongation graph. (Refer Equation 19) 8.2c) Apply strain energy per unit volume from stress-strain graph 8.2c) Apply strain energy per unit volume from stress-strain graph Experiments ii 6 All objectives achieve Students are able to understand the material								

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	15									
CHAPTER	Chapter:	8: PHYSICS OF M	ATTER							
MODE	TUTORI	AL								
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1	NF2F (hour):	1						
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	CTION	REMARKS		
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 18/11/2021(T5A); 18/11/2021(T5B); 18/11/2021(T6A); 18/11/2021(T6A)	8.2b) App Equation 8.2c) App	(a) Define and use Young's Modulus (Refer Equation 19) (b) Apply strain energy from force-elongation graph. (Refer uation 19) (c) Apply strain energy per unit volume from stress-strain graph. efer Equation 19)			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	SCOR E 6 5 5 5 6	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIC	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	16	6								
CHAPTER	Chapter:	8: PHYSICS OF M	ATTER							
MODE	TUTORI	AL								
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1 NF2F (hour): 1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 22/11/2021(T5A); 22/11/2021(T5B); 23/11/2021(T6A); 23/11/2021(T6A)	8.3b) Solv sectional a (Refer Eq 8.3c) Ana conductio	3a) Define heat conduction. 3b) Solve problems related to rate of heat transfer through a crossctional area (remarks: maximum two insulated objects in series) 8cefer Equation 20) 3c) Analyse graphs of temperature-distance (T-L) for heat onduction through insulated and non-insulated rods, maximum two ds in series.			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 6 5 6 5	All objectives achieved. Students are able to understand the materials of the topic.		

Prepared by,

SHAFIQ BIN RASULAN

Physics Lecturer

Sarawak Matriculation College

Date:

Endorsed by

MARY GWADOLINE YUSUS

Head of the Physics Unit Sarawak Matriculation College

LECTURER	SHAFI	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	16	6								
CHAPTER	Chapter:	8: PHYSICS OF M	IATTER							
MODE	TUTORI	AL								
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 23/11/2021(T5A); 23/11/2021(T5B); 24/11/2021(T6A)	8.3b) Solv sectional a (Refer Eq 8.3c) Ana conductio	a.3a) Define heat conduction. a.3b) Solve problems related to rate of heat transfer through a cross- ectional area (remarks: maximum two insulated objects in series) Refer Equation 20) a.3c) Analyse graphs of temperature-distance (T-L) for heat conduction through insulated and non-insulated rods, maximum two ods in series.				ITEM *Appe ndix i ii iii v	SCOR E 5 6 6 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFI	SHAFIQ BIN RASULAN							
CODE / COURSE	SP015								
WEEK	16								
CHAPTER	Chapter:	8: PHYSICS OF M	IATTER						
MODE	TUTOR	IAL							
CLO	CLO2: S	Solve problems relat	ed to mechanics, was	es, matter, hea	t and thermodyna	mics.			
SLT	F2F (hour):	NF2F (hour):							
CLASS (DAY, TIME, VENUE) DATE		LEARNI	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS	
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 25/11/2021(T5A); 25/11/2021(T5B); 25/11/2021(T6A)	volume e. 8.4b) Solvolume, i 21) 9.1a) Stat 9.1b) Des Equation 9.1c) Solvole cules	xpansion, y ve problems related to nclude expansion of li te the assumptions of li scribe root mean squar 22) ve problems related to s (Refer Equation 22)	thermal expansion of laquid in a container. (Remains the container) of gases. The (rms) speed of gas more of the equations and present expansion of the equations and present expansion of the equations and present expansion of the expansion of t	inear, area and efer Equation blecules (Refer	Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v	SCOR E 6 5 6 6 5	All objectives achieved. Students are able to understand the materials of the topic.	

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	P015								
WEEK	17	7								
CHAPTER	Chapter:	9: KINETIC THEC	ORY OF GASES AN	O THERMOD	YNAMICS					
MODE	TUTORI	AL								
CLO	CLO2: S	CLO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1	NF2F (hour):	1						
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(MON, 1100hrs, DK1), T5B(MON, 1200 hrs, DK1), T6A(TUE, 0800 hrs, BT1), T6B(TUE, 1400 hrs, BT1) 29/11/2021(T5A); 29/11/2021(T5B); 30/11/2021(T6A); 30/11/2021(T6A)	(Refer Eq 9.2b) Defi 9.2c) Iden diatomic a 9.2d) State 9.2e) Disc	.2a) Explain and use translational kinetic energy of a molecule Refer Equation 23) .2b) Define degree of freedom2c) Identify number of degrees of freedom, f for monoatomic, iatomic and polyatomic gas molecules2d) State the principle of equipartition of energy2e) Discuss internal energy of gas2f) Solve problems related to internal energy (Refer Equation 23)			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii	SCOR E 6 6 6 6 6 6	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIQ BIN RASULAN	SHAFIQ BIN RASULAN							
CODE / COURSE	SP015	P015							
WEEK	17								
CHAPTER	Chapter: 9: KINETIC THEO	ORY OF GASES ANI	THERMOD	YNAMICS					
MODE	TUTORIAL								
CLO	CLO2: Solve problems relat	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.							
SLT	F2F (hour):	NF2F (hour):							
CLASS (DAY, TIME, VENUE) DATE	LEARNII	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLE	ECTION	REMARKS		
T5A(TUE, 0900hrs, BT1), T5B(TUE, 1500 hrs, MF), T6A(WED, 0800 hrs, BT1), T6B(WED, 0900 hrs, BT1) 30/11/2021(T5A); 30/11/2021(T5B); 01/12/2021(T6A); 01/12/2021(T6A)	9.3b) Solve problem related to 9.4a) Define the following then	.3a) State the First Law of Thermodynamics (Refer Equation 24) .3b) Solve problem related to First Law of Thermodynamics4a) Define the following thermodynamic processes – Isothermal, sochoric, Isobaric and Adiabatic.			ITEM *Appe ndix i ii iii v	SCOR E 5 5 5 5 6	All objectives achieved. Students are able to understand the materials of the topic.		

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LECTURER	SHAFIG	SHAFIQ BIN RASULAN								
CODE / COURSE	SP015	SP015								
WEEK	17	7								
CHAPTER	Chapter:	9: KINETIC THEC	ORY OF GASES AN	O THERMOD	YNAMICS					
MODE	TUTORI	AL								
CLO	CLO2: S	LO2: Solve problems related to mechanics, waves, matter, heat and thermodynamics.								
SLT	F2F (hour):	1 NEZE (hour): 1								
CLASS (DAY, TIME, VENUE) DATE		LEARNIN	NG OUTCOME		T&L STRATEGIE S & TOOLS	REFLEC	CTION	REMARKS		
T5A, T5B, T6A, T6B(THUR, 0800hrs, DK1) 02/12/2021(T5A); 02/12/2021(T5B); 02/12/2021(T6A); 02/12/2021(T6A)	9.5a) Deri isobaric pi 9.5b) Solv	4b) Analyse P-V graph for all the thermodynamic processes. 5a) Derive equation of work done in isothermal, isochoric and obaric processes from P-V graph. 5b) Solve problem related to work done in isothermal process, obaric process, and isochoric process (Refer Equation 25)			Discussions Thought Experiments Activities	ITEM *Appe ndix i ii iii v v	SCOR E 6 6 5 5 5	All objectives achieved. Students are able to understand the materials of the topic.		

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