UNIVERSITI TEKNOLOGI MARA

SPP521: MECHANICS, PROPERTIES OF MATTER AND HEAT

Course Name (English)	MECHANICS, PROPERTIES OF MATTER AND HEAT APPROVED
Course Code	SPP521
MQF Credit	3
Course Description	This course is design for the preparation primary school teacher and specifically intended for primary school teacher with the knowledge of basic physic combined with algebra technique. Among the chapter included are measurement, force and motion, property of matter, heat and their relevance with the daily phenomena. Other than that the normal physic misconception that student normally have about the topic is discussed and several teaching technique is emphasized for the primary teacher to be confident whenever teaching something related to physical science.
Transferable Skills	Science process skill
Teaching Methodologies	Lectures, Blended Learning, Self-directed Learning, Directed Self-learning
CLO	CLO1 Describe the basic principles of measurement, force and motion, properties of matter and heat CLO2 Relate physic concept to mathematics CLO3 Relate physic concept to daily phenomena CLO4 Discuss about physic misconceptions in certain chapter CLO5 Increase in confidence in teaching physical science theme to primary school
Pre-Requisite Courses	No course recommendations

Topics
1. Physic as Basic Science and Measurement 1.1) Introduction to basic science 1.2) Common area of physic 1.3) Introduction to Scientific Investigation 1.4) Basic measurement 1.5) Measurements and measurement instruments
2. Newton's Law of Motion and Linear Motion 2.1) Introduction to Linear Motion 2.2) Misconception related to Linear Motion 2.3) Introduction to Second Newton's law of motion 2.4) Introduction to third Newton's law of motion 2.5) Misconception related Newton Law of motion
3. Momentum and energy 3.1) Introduction to Momentum 3.2) Principal of conservation Momentum 3.3) Misconception related to Momentum
4. Gravity and projectile motion 4.1) Introduction to Gravity 4.2) Introduction to projectile motion 4.3) Misconception related to Gravity
5. Solids, Gases and liquids 5.1) Introduction to Solids, Gases and liquids 5.2) Properties of Solids, Gases and liquids 5.3) Misconception related to Solids, Gases and liquids

6. Temperature and Heat
6.1) Introduction to Temperature and Heat
6.2) Heat Transfer and changes in state of matter
6.3) Misconception related to Temperature and Heat

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Discussion	Mark will be given based on student answer or discussion to the question given in the i-Learn	5%	CLO1 , CLO3
Group Project	At least 1 activity will be done in classroom setting and the result (with the report) will be count as project one	10%	CLO1 , CLO3 , CLO4 , CLO5
Presentation	A presentation of certain activities will be given (via i-Learn or in class) by the student in group.	10%	CLO1 , CLO3 , CLO4 , CLO5
Quiz	A set of test paper and student should do it and sent it via email or in a classroom	5%	CLO1 , CLO2 , CLO3
Test	Test will be done in classroom. Online Test will be done outside classroom hour (Online).	30%	CLO1 , CLO2 , CLO3

Reading List

Recommended Text

- **Griffith, W.T 2004, *The Physics of Everyday Phenomena: A Conceptual Introduction to Physics*, 4 Ed., McGraw Hill New York**
- **Abruscato, J 2004, *Teaching Children Science: A Discovery Approach*, 6 Ed., Ally & Bacon**
- **Bloomfield, L.A. 2001, *How Things Work: The Physics of Everyday Life*, 2 Ed., John Wiley New York**

Reference Book Resources

- **Hewitt, P.G 2010, *Conceptual Physics*, 11 Ed., Pearson Education Inc Illinois**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources