

## LESSON PLAN

### A. Identity

School	:	SMA N .....
Subject	:	Physics
Grade/Semester	:	X/1
Standard Competence	:	1. Analyzing natural phenomenon and its regularly in mechanical particle coverage
Basic Competence	:	1.2 Executing vector addition
Indicators	:	1. Adding two vectors with analytical methods
Time Allocation	:	2 x 45 minutes

### B. Learning Objectives

After learning the lesson, the students are hoped able to:

1. Determine magnitude of vector resultant with analytical methods.
2. Determine the direction of vector resultant with analytical methods.
3. Apply vector addition concept in solving problem.

### C. Learning Materials

Vector addition with analytical methods

1. Magnitude of vector resultant
2. Direction of vector resultant

### D. Learning Methods

Methods: Explaining, Questioning.

### E. Learning Activities

1. Pre-teaching Activity
  - a. Mentioning Learning objectives  
The teacher mentions learning objectives that should be understood by the students
  - b. Motivation  
Have you gone to Maninjau lake? Have you seen the hydroelectric there? Why is the water from the lake can result electric energy?
  - c. Pre-request knowledge  
Before learning this topic, the student should remember about concept of energy, gravity acceleration, and elasticity.
2. Whilst Teaching Activity
  - a. The teacher asks two students to do demonstration. First student pulls the rubber and leaves it to another student hand with different force.
  - b. The teacher explains about gravitational potential energy and guides the students to formulate the formula.
  - c. After that, the teacher explains about elastic potential energy and guides the students to formulate its formula.
  - d. The teacher gives a sample problem to the students and explains it to them.
  - e. The teacher explains the application of potential energy in daily life (in Hydroelectric Generator/PLTA and shotgun).

3. Post-teaching Activity
  - a. The teacher guides the students to conclude the lesson that day.
  - b. The teacher gives students homework and reminds about the following topic.

#### F. Learning Sources

1. References

Glencoe. 2005. *Physics Principles and Problems*. United States: McGraw-Hill, Inc.

Halliday and Resnick. 2000. *Fundamental of Physics.pdf*

Marthen Kanginan. 2002. *Fisika SMA 2B*. Jakarta: Erlangga

Sunardi dan Etsa Indra Irawan. 2006. *Fisika Bilingual 2*. Bandung:Yrama Widya
2. Materials and instrumens: rubber, a stone, and a piece of paper.

#### G. Evaluation

1. Technique: test
2. Form of instrument: multiple choice and essay
3. Sample instrument:
  - a. A coconut is on its tree at height of 6 meters from the ground. If the coconut is 2 kg in mass and gravitational acceleration is  $10 \text{ m/s}^2$ , what is the potential energy of the coconut?
    - A. 60 J
    - B. 80 J
    - C. 100 J
    - D. 120 J
    - E. 240 J
  - b. A spring has constant of 100 N/m. when the deviation of 5 cm, the potential energy of the spring is...
  - c. An object with 5 gr in mass is lifted from the ground to a place 5 m high above the ground. Determine the potential energy of the object to the ground and a place 2.5 m high above the ground! (given  $g = 10 \text{ m/s}^2$ ).

Approved by Head Master

( )  
NIP.

Padang, July 2009  
Physics teacher

(Rudi Hartono)  
NIP.