

Kafrelsheikh University  
Faculty of Engineering  
Department of  
Physical and Mathematical Engineering



2020/2021  
Second Term  
Research Project  
First year  
Mechanical Engineering

Course name: **Engineering physics (2)**

Course Code: **PHM1205**

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**Write on ONLY ONE of the following Research Topics :**

Research Topic(1)

A. Modern Physics

1. Detailed comparison between Classical and Modern Physics.
2. Detailed discussion for Compton effect and the wave nature of matter.
3. Detailed discussion for uncertainty principle with one application.

B. Vibrations and Waves

1. Motion of an Object Attached to a Spring
2. Forced Oscillations
3. The Speed of Waves on a String

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Research Topic(2)

A. Modern Physics

1. Detailed comparison between Classical and Modern Physics.
2. Detailed discussion for the wave function and its interpretation (with examples).
3. Detailed discussion for quantum tunneling with one application.

B. Vibrations and Waves

1. Damped Oscillations
2. The Traveling Wave Model
3. The Doppler Effect

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**Best Wishes**

**Dr. Ahmed Saeed**

**Dr. Demyana Adel Abdel Masieh**