



Term 1 End of Term Revision Sheet
SABIS® General Physics I

GPI Ch.1 Linear Motion

Course Practice: 2324-GPI11, 2324-GPI12, 2324-GPI13

1.1 Describing Motion

1. Identify how the motion of an object changes with the choice of the frame of reference.
2. Use an example to explain how motion is related to a frame of reference and explain what the direction of motion describes.

1.2 Position, Distance, and Displacement

3. Define the position of an object.
4. Differentiate between distance and displacement.

1.3 Velocity and Speed

4. Differentiate between average velocity and average speed.
5. Define instantaneous velocity.

1.4 Acceleration

7. Define average acceleration and instantaneous acceleration.
8. Identify when an object is said to be speeding up or slowing down.

1.5 Graphs of Motion

9. Describe how to represent the motion of an object on a position-time graph.
10. Describe the velocity-time graph of an object whose acceleration is constant.

1.6 Equations of Motion

11. Apply the equation of motion of a uniform rectilinear one.
12. Derive the equation of motion for an object accelerating uniformly from rest.

1.7 Free Fall

13. Define free fall.
14. Recognize the effect of air resistance on falling objects.

GPI Ch.2 Forces

Course Practice: 2324-GPI21

2.1 What Is a Force?

1. Define forces.
2. Recognize that a force is the result of the interaction between two objects.
3. Recognize the characteristics necessary to describe a force.

2.2 Types of Forces

4. Define contact forces.
5. Define normal reaction.
6. Define tension.
7. Define friction.
8. Differentiate between static friction and kinetic friction.
9. Define air resistance.
10. Define forces at a distance
11. Define weight and give the mathematical expression of its magnitude.
12. Identify the magnetic force as a force at a distance.
13. Define electric forces.

2.3 Free-Body Diagrams

14. Recognize how to build a free-body diagram.

GPI Ch.3 Newton's Laws of Motion

Course Practice: 2324-GPI31, 2324-GPI32

3.1 Net Force

1. Recognize how to add parallel forces.
2. Recognize how to add perpendicular forces using the triangle rule.
3. Recognize how to add forces using the triangle rule.
4. Describe when the forces acting on an object are balanced.
5. Describe how to identify that the forces acting on an object are unbalanced.

3.2 Newton's First Law of Motion

6. State and apply Newton's first law of motion.
7. Explain why real moving objects do not keep moving at the same speed.
8. Define inertia.

3.3 Newton's Second Law of Motion

9. Identify the factors on which the acceleration of an object depends.
10. Recognize how acceleration and mass are related.
11. Recognize how acceleration and net force are related.
12. Express mathematically Newton's second law of motion.
13. Explain why the acceleration of falling bodies is the same.
14. Describe when a falling object reaches its terminal velocity.

3.4 Newton's Third Law of Motion

15. State Newton's third law of motion and identify what it describes.
16. Explain why the action and reaction forces do not cancel each other.
17. Identify the action and reaction forces in some daily activities.

GPI Ch.4 Energy

Course Practice: 2324-GPI41, 2324-GPI42

4.1 Energy

1. Define energy and explain how it causes changes.

4.2 Types of Energy

2. Define kinetic energy and describe how mass and speed affect it.
3. Define gravitational potential energy and understand how gravity, mass, and height affect it.
4. Define elastic potential energy.

4.3 Forms of Energy

5. Define mechanical energy.
6. Describe the propagation of sound energy.
7. Define thermal energy.
8. Relate electrical energy to kinetic and potential energy.
9. Define electromagnetic energy.
10. Identify how to release the chemical energy in some elements.
11. Describe the nature of nuclear energy.

4.4 Energy Conversion

12. List some examples of energy transfer.
13. Define energy conversion.
14. Describe, using examples, the kinetic potential energy conversion.
15. Describe the energy conversion in a pendulum.
16. Describe how a hydroelectric power plant produces electrical energy.
17. Describe how a coal power plant produces electrical energy.

4.5 Conservation of Energy

18. State and explain the law of conservation of energy.

4.6 Renewable and Non-Renewable Sources of Energy

19. Recognize the different fossil fuels.
20. Explain why fossil fuels are nonrenewable.
21. List some uses of fossil fuels.
22. Understand how the use of fossil fuels contributes to the pollution of air, water, and land.
23. List the advantages and disadvantages for using biomass as fuel.
24. Describe the different uses of solar energy.
25. List some disadvantages of using wind power.
26. Define hydropower.

27. Define geothermal energy and how it can be harnessed.

GPI Ch.5 Work and Energy

Course Practice: 2324-GPI51, 2324-GPI52, 2324-GPI53

5.1 Work

1. Define work and recognize how to calculate the work done on an object.
2. Recognize that the work done by a force can be positive or negative.

5.2 Work–Kinetic Energy Theorem

3. State and apply the work–kinetic energy theorem.

5.3 Work and Gravitational Potential Energy

4. Express the work done by gravity.
5. Relate gravitational potential energy to work done by gravity.

5.4 Conservation of Energy

6. Apply the law of conservation of energy.

5.5 Power

7. Define power and recognize how to calculate it.

5.6 Simple Machines

8. Explain how simple machines help us do work, and list the main types of simple machines.
9. Understand how to calculate efficiency.
10. Define mechanical advantage and understand how to calculate it.
11. Define inclined planes.
12. Define wedge and describe how wedges are useful.
13. Define screw and describe how screws are useful
14. Describe the different types of levers.
15. Describe how the mechanical advantage of a wheel and axle varies with the sizes of the wheel and axle.
16. Describe a pulley and its function

5.7 Compound Machines

17. Relate the mechanical advantage of a compound machine to the number of simple machines it contains.

GPI Ch.6 Momentum and Collisions

Course Practice: 2324-GPI61

6.1 Linear Momentum

1. Define linear momentum.

6.2 Impulse-Momentum Theorem

2. Define impulse and apply the impulse momentum theorem.

6.3 Momentum and Newton's Third Law of Motion

3. Understand the relation between momentum and Newton's third.