

PHYSICS 20- Course Outline

Preparatory 1

P Significant Figures 1

UNIT 1- Kinematics 27

Kinematics

1.1 The Language of Motion 1

1.2 Position-time Graphs and Uniform Motion 2

1.3 Velocity-time Graphs: Uniform Vs. Non-uniform Motion 2

1.4 Analyzing Velocity-time Graphs 2

Assignment 1 Due: Wednesday September 10th Period 4

1.5 The Kinematics Equations 3

1.6 Acceleration due to Gravity 2

Assignment 2 Due: Monday September 15th Period 2

TEST 1- Kinematics: Monday September 15th Period 2 1

Motion

2.1 Vector Methods in 1 Dimension 2

2.2 Motion in Two Dimensions 3

Assignment 3 Due: Monday September 22nd Period 2

2.3 Relative motion 4

2.4 Projectile Motion 4

Assignment 4 Due: Monday September 29th Period 4

TEST 2- Motion: Monday September 29th Period 4 1

UNIT 2- Dynamics 30

Newtonian Laws

3.1 The Nature of Force 3

3.2 Newton's First Law 3

Assignment 1 Due: Monday October 6th Period 2

3.3 Newton's Second Law 4

3.4 Newton's Third Law 5

Assignment 2 Due: Thursday October 16th Period 2

TEST 3- Newtonian Laws: Thursday October 16th Period 2 1

Friction and Gravitation

3.5 Friction Affects Motion 3

Assignment 7 Due: Thursday October 16th Period 2

4.1 Gravitational Forces due to Earth 3

4.2 Newton's Law of Universal Gravitation 3

4.3 Relating Gravitational Field Strength to Gravitational Force 4

Assignment 8 Due: Wednesday October 29th Period 4

TEST 4- Wednesday October 29th Period 4 1

UNIT 3- Circular Motion, Work & Energy **36**

Circular Motion

- 5.1 Defining Circular Motion 3
5.2 Circular Motion and Newton's Laws 8

Assignment 9

- 5.3 Satellites and Celestial Bodies in Circular Motion 8

Assignment 10

Test 5- Circular Motion 1

Work and Energy

- 6.1 Work and Energy 4
6.2 Mechanical Energy 3

Assignment 11

- 6.3 Mechanical Energy in Isolated and Non-isolated Systems 5
6.4 Work and Power 3

Assignment 12

Test 6- Work & Energy 1

UNIT 4- Oscillatory Motion and Mechanical Waves **35**

Oscillatory Motion

- 7.1 Period and Frequency 2
7.2 Simple Harmonic Motion 7

Assignment 13

- 7.3 Position, Velocity, Acceleration and Time Relationships 8
7.4 Applications of Simple Harmonic Motion 2

Assignment 14

Test 7- Oscillatory motion

Waves

- 8.1 The Properties of Waves 4
8.2 Transverse and Longitudinal Waves 4

Assignment 15

- 8.3 Superposition and Interference 4
8.4 The Doppler Effect 3

Assignment 16

Test 8- Waves 1

COURSE TOTAL 129

FINAL EXAM

Marking Schedule

- Final Exam 40%
Tests 40%
Assignments 20%