***Phys210 (*ميكانيكا تقليدية-1 *(***

***COURSE SYLLABUS***

***Text book***

F U N D A M E N TA L S O F P H Y S I C S

***( 10th edition )-* HALLIDAY & RESNICK**

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| **Chapter** | **Sections Contents** | **Examples** | **problems** |
| **4**  Motion in Two and Three Dimensions | **4-1** POSITION AND DISPLACEMENT  **4-2** AVERAGE VELOCITY AND INSTANTANEOUS VELOCITY  **4-3** AVERAGE ACCELERATION AND INSTANTANEOUS ACCELERATION  **4-4** PROJECTILE MOTION  **4-5** UNIFORM CIRCULAR MOTION |  | 1,3  4,5,7  11,13,15  23,27,28,29  107 |
| **9**  Center of Mass and Linear Momentum | **9-1** CENTER OF MASS  **9-3** LINEAR MOMENTUM  **9-4** COLLISION AND IMPULSE  **9-5** CONSERVATION OF LINEAR MOMENTUM  **9-6** MOMENTUM AND KINETIC ENERGY IN COLLISIONS  **9-7** ELASTIC COLLISIONS IN ONE DIMENSION  **9-8** COLLISIONS IN TWO DIMENSIONS  **9-9** SYSTEMS WITH VARYING MASS: A ROCKET |  | 1,3,5  18,19,22  23,25,29  39,45  49,51  61,63  71,73  76,79 |
| **10**  Rotation | **10-1** ROTATIONAL VARIABLES  **10-2** ROTATION WITH CONSTANT ANGULAR ACCELERATION  **10-3** RELATING THE LINEAR AND ANGULAR VARIABLES  **10-4** KINETIC ENERGY OF ROTATION  **10-6** TORQUE  **10-7** NEWTON’S SECOND LAW FOR ROTATION  **10-8** WORK AND ROTATIONAL KINETIC ENERGY |  | 1,3,5  9,13,15  19,23,28  45,49,53  49,51  59,61,63 |
| **11**  Rolling, Torque, and Angular Momentum | **11-1** ROLLING AS TRANSLATION AND ROTATION COMBINED  **11-2** FORCES AND KINETIC ENERGY OF ROLLING  **11-4** TORQUE REVISITED  **11-5** ANGULAR MOMENTUM  **11-6** NEWTON’S SECOND LAW IN ANGULAR FORM  **11-7** ANGULAR MOMENTUM OF A RIGID BODY  **11-8** CONSERVATION OF ANGULAR MOMENTUM  **11-9** PRECESSION OF A GYROSCOPE |  | 1  3,5,7,11  21,23,25  26,27,30  33  36,38  43,47,53,60  59,66  68 |
| **12**  Equilibrium and Elasticity | **12-1** EQUILIBRIUM  **12-2** SOME EXAMPLES OF STATIC EQUILIBRIUM |  | 3,10,15,17  25,28 |
| **13**  Gravitation | **13-1** NEWTON’S LAW OF GRAVITATION  **13-3** GRAVITATION NEAR EARTH’S SURFACE  **13-4** GRAVITATION INSIDE EARTH  **13-5** GRAVITATIONAL POTENTIAL ENERGY  **13-6** PLANETS AND SATELLITES: KEPLER’S LAWS  **13-7** SATELLITES: ORBITS AND ENERGY |  | 3,5  17,19  25,27  31,33,37  43,47,54  61,65 |

***Course Evaluation***

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| ***Exam*** | ***Marks*** | ***Date*** | ***Notes*** |
| **1st** Midterm | ***20*** | ***22/3/2018*** |  |
| **2nd** Midterm | ***20*** | ***19/4/2018*** |  |
| **Exercises:** Report & Exam | ***20*** | ***open*** |  |
| **Final** | **40** | ***9/5/2018*** |  |
| **TOTAL** | **100** |  |  |