

Physics 101.

Lecture 1.

Friday, Jan. 3, 2003

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Topics Covered:      1. Course Introduction .  
                                 2. 1-D Kinematics .

Ref:      Walker . ch. 2 .

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1. Course Introduction .

- Instructor :      Dr. Michael CHEN

<http://www.sfu.ca/~mxchen/>

Click on "phys101" for the course webpage  
of Physics 101 .

- Textbook :      Physics . by James S. Walker .

- Exam Dates :      Midterm #1 : Fri. Feb. 14 .

Midterm #2 : Fri. Mar. 14 .

Final Exam : Mon. Apr. 14 .

- Grading : The best of: ①, ② and ③

①. CAPA : 10% .

Midterms: 40% . ( 2 x 20% )

Final exam: 50% .

②. CAPA : 10% .

Midterm : 20% . ( The best of Midterm #1 and #2 )

Final exam: 70% .

③ CAPA : 10% .

Final exam: 90% .

- CAPA — Computer-Assisted Personalized Assignments .

Follow the instructions on the course webpage .

- Open Labs — Tutorial sessions . (Not mandatory) .

M. T. 12:30 - 17:20 . P8445B .

- All Tests and the final exam are closed book .

A one-page handwritten formula sheet is allowed .

- Areas in Physics .

|                           |   |                        |
|---------------------------|---|------------------------|
| mechanics                 | } | This course Phys 101 . |
| waves                     |   |                        |
| thermodynamics            |   |                        |
| electricity and magnetism |   |                        |
| optics                    |   |                        |
| modern physics            |   |                        |
| ... ..                    |   |                        |
| (advanced Topics)         |   |                        |

- Mechanics

— The study of Motion .

① Kinematics — description of Motion

② Dynamics — cause of motion .

(relation between motion and forces)

## 1-D Kinematics

- Description of Motion along a straight line.

- Set up a coordinate system whenever you try to describe the motion of an object.



- position :  $x$  — The location of the object.

e.g: At time  $t_1$ , the man is at  $x_1$  ;  
at time  $t_2$ , the man is at  $x_2$ .

Then, we define the displacement as

$$\Delta x = x_2 - x_1 = x_{\text{final}} - x_{\text{initial}}.$$

It's the change in position, can be positive or negative.  
OR zero.

We define the distance as the length of travel  
in the time interval from  $t_1$  to  $t_2$ , i.e.,  $\Delta t = t_2 - t_1$ .