

PHYSICS SEC1 COURSE ON GNUPLOT & PYTHON

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GNUPLOT

- 1) Plot functions and data, xlabel, ylabel, xrange, yrange, with points/dots/linespoints & line width. Define a function and plot them.
- 2) Curve Fitting using GNU Plot.
- 3) Polar & Parametric Plot.
- 4) Conditional plotting of data using \$\$, &&, ||

5) Assessment

PYTHON

- 6) Python as interpreter (calculator), data type (int, float, complex, list, tuple, set, string)
- 7) Basic Mathematical operations, if-elif-else, for, while loops
- 8) Function definition, Lambda function, I/O statements, import modules
- 9) Operations on lists, tuples & strings
- 10) Operations on lists, tuples & strings
- 11) Factors of an integer,
- 12) Integer is prime?
- 13) Find a prime $>/<$ a given value
- 14) All primes within a range
- 15) Root NR & Bisection,
- 16) Bubble sort
- 17) Sum of Series upto a decimal place (Sine, Cosine etc)
- 18) Simulation of motion using Euler's method of a particle in 1D under a given force $F(x, t, v)$
- 19) Matrix Addition, Multiplication and Transpose using List Comprehension

20) Assessment