



Code	Subject Title	Cr. Hrs	Semester
PHY-104	Thermodynamics and Kinetic Theory	3	II
Year	Discipline		
1	Physics		

Kinetic theory of the ideal gas, work done on an ideal gas, internal energy of an ideal gas, intermolecular forces.

Statistical mechanics, statistical distribution and mean values, distribution of molecular speeds, distribution of energies, Brownian motion.

Heat and Thermodynamics; heat, different theories of heat, specific heat, gram molecular specific heat, laws of thermodynamics, Zeroth law, first law, second law, third law of thermodynamics, reversible and irreversible processes, indicator diagram, entropy, law of increase of entropy, temperature-entropy diagram, Maxwell's thermodynamics relations, TDS equations, Clapeyron's equation, entropy and second law of thermodynamics, reversible and irreversible processes, second law of thermodynamics, Carnot Cycle, Carnot engine, thermodynamic temperature scale, entropy, low temperature physics.

Thermoelectricity, Seebeck effect, Peltier effect, thermocouple.

Books Recommended:

1. *Physics Vol I.&II (extended)* by Resnick, Halliday and Krane, 4th Edition, John Wiley and Sons Inc, New York, 1992.
2. *Physics Vol I &II (extended)* by Resnick, Halliday and Krane, 5th Edition, John Wiley and Sons Inc, New York, 2002.
3. *Fundamental of Physics* by Halliday Resnick and Krane, 5th Edition, John Wiley and Sons Inc, New York, 1999.
4. *University Physics* 8th Edition by Sears, Zemansky and Young, Addison-Wesley, Reading (MA), USA,
5. 2000.
6. *Physics* by Alonso and Finn: Addison-Wesley, Reading (MA), USA, 1999.