

**Dr. V.D.Kulkarni,**  
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**HutatmaRajguruMahavidyalaya,**  
**Rajgurunagar (Pune)**

**Syllabus Completion Report (Sem-I)**  
**(2019-20)**

**T.Y.B.Sc. PH 335: Computational Physics**

Sr. No.	Completed Topics	Month
01	<b>1. Concepts of programming:</b> Definition and Properties of algorithms, Algorithm development,	12/07/2019 To 22/07/2019
02	Algorithm development, Flow charts- symbols and simple flowcharts	
03	Flow charts and Algorithms for Kinematic equations, Free fall, Equation of state, Factorial of a number.	
04	Types of programming language: Lower, middle and higher level languages.	
05	<b>1. C Programming</b> Structure of C program, Character set, key words,	23/07/2019 To 12/08/2019
06	Constants and variables, Variable names,	
07	Data types and their declarations, Symbolic Constants.	
08	Input/output functions: scanf ( ), printf ( ), getchar ( ), putchar ( ), getch ( ), gets ( ), puts ( ).	
09	Operators and Expressions: Arithmetic Operators, Relational Operators, Logical Operators,	
10	Assignment Operators, Conditional Operator. Formatted input/output	
11	Control statements: If, if else, while, do while for loop, nested control structures	

12	(nested if, nested loops), break, continue, switch- case statement, goto statement.	
13	Use of Library functions: e.g. mathematical, trigonometric, graphics.	
14	<b>3. Arrays and Pointers in C</b> Arrays: 1-D, 2-D and String	13/08/2019 To 31/08/2019
15	Examples: Arranging numbers in descending and ascending order,	
16	Sum of matrices, multiplication of matrices.	
17	Concept of Pointers	
18	<b>4. User Defined Function in C</b> User defined functions: Definitions and declaration of function, function prototype.	1/09/2019 To 17/09/2019
19	Passing arguments (Call by value, Call by reference).	
20	Storage Classes: Auto, External, Static, Register variables.	
21	<b>5. Graphics in C:</b> Some simple graphic commands	19/09/2019 To 23/09/2019
	- Line, Circle, Arc, Ellipse, Bar.,Problems	
22	<b>6. Computational Physics:</b> Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use inComputer, Truncation error, round off errors	24/09/2019 to till term end
23	Iterative methods: Discussion of algorithm and flowcharts and writing Cprograms for finding	
24	single root of equation using bi-section method, NewtonRaphsonmethod.	
25	Discussion of algorithm and flowcharts and writing C program for trapezoidalrule and Simpson's 1/3rd rule	

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## Syllabus Completion Report (2019-20)

**T.Y.B.Sc. (Sem-II)**

### Thermodynamics and Statistical Physics (PH-343)

Sr. No.	Completed Topics	Dates
01	<b>Ch-1 - Kinetic Theory of gases</b> Assumptions of Kinetic Theory of gases, Mean free path	04/12/2019 05/12/2019 06/12/2019
02	Transport Phenomena, Viscosity	07/12/2019
03	Thermal conductivity and diffusion	11/12/2019, 12/12/2019
04	Problems	13/12/2019
05	<b>Ch-2- Maxwell's relations and applications</b>  Thermodynamic functions	14/12/2019
06	Enthalpy, Entropy, Internal Energy, Helmholtz Functions	14/12/2019
07	Maxwell's relations	18/12/2019
08	First and Second TdS equations	19/12/2019
09	Joule – Thomson's effect, Problems	20/12/2019 21/12/2019
10	<b>Ch-3- Elementary Concepts of Statistics</b>  Probability distributions, functions, Problems	26/12/2019 27/12/2019
11	Random Walk Problem and Binomial distribution	28/12/2019, 01/01/2020
12	Simple Random Problem	02/01/2020
13	Probability distribution for large N	02/01/2020
14	Gaussian Probability distribution and Problems	08/01/2020
15	<b>Ch-4- Statistical distribution of system of particles</b>  State of Systems, Ensembles	09/01/2020

<b>Sr. No.</b>	<b>Completed Topics</b>	<b>Dates</b>
16	Basic Postulates, Probability Calculations	10/01/2020, 11/01/2020
17	Behavior of density of states	23/01/2020
18	Thermal. Mechanical Interactions, Problems	24/01/2020, 25/01/2020
19	<b>Ch-5- Statistical Ensembles</b>  Micro canonical Ensembles, Canonical Ensembles	29/01/2020, 30/01/2020
20	Applications of Canonical Ensembles	31/01/2020
21	Molecules in ideal gas, Mean Values in Canonical Ensembles, Problems	05/02/2020, 07/02/2020, 08/02/2020
22	Internal Test	10/02/2020
23	Internal Test	11/02/2020
24	Internal Test	12/02/2020
25	<b>Ch-6-Quantum States</b> Quantum distribution function	22/02/2020, 24/02/2020
26	Maxwell – Boltzman Statistics, Bose – Einstein Statistics	25/02/2020, 26/02/2020, 27/02/2020, 28/02/2020
27	Fermi – Dirac Statistics	29/02/2020, 02/03/2020
28	Comparisons of B-E,M-B,F-D Statistics	03/03/2020
29	Problems	04/03/2020, 05/03/2020
30	University question Papers solved	06/03/2020, 07/03/2020

- 1) T.Y.B.Sc.:- Sixteen (16) Practical of **Two** batches completed in Academic Year 2019-2020.
- 2) Projects of T.Y.B.Sc Students.:- Projects of Nine (9) T.Y.B.Sc. Students completed in Academic Year 2019-2020.

**Dr. V.D.Kulkarni**

