Dr. V.D.Kulkarni,
Dept of Physics
HutatmaRajguruMahavidyalaya,
Rajgurunagar (Pune)

Syllabus Completion Report (Sem-I)

(2018-19)

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

Sr. No.	CompletedTopics	Month
01	**1.Concepts of programming:** Definition and Properties of algorithms, Algorithm development,	11/07/2018 To 20/07/2018
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	**1. C Programming** Structure of C program, Character set, key words,	21/07/2018 To 10/08/2018
06	Constants andvariables, 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, LogicalOperators,	
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	**3. Arrays and Pointers in C** Arrays: 1-D, 2-D and String	11/08/2018 To 31/08/2018
15	Examples: Arranging numbers in descending and ascending order,	
16	Sum of matrices, multiplication of matrices.	
17	Concept of Pointers	
18	**4. User Defined Function in C** User defined functions: Definitions and declaration of function, function prototype.	1/09/2018 To 15/09/2018
19	Passing arguments (Call by value, Call by reference).	
20	Storage Classes: Auto, External, Static, Register variables.	
21	**5. Graphics in C**: Some simple graphic commands	19/09/2018 To 26/09/2018
	- Line, Circle, Arc, Ellipse, Bar.,Problems	
22	**6. Computational Physics:** Errors in Computation: Inherent errors in storing numbers due to finite bit representation to use inComputer, Truncation error, round off errors	27/09/2018 to till term end (09/10/2018)
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 (2018-19)

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

Thermodynamics and Statistical Physics (PH-343)

Sr. No.	Completed Topics	Dates
01	**Ch-1 - Kinetic Theory of gases** Assumptions of Kinetic Theory of gases, Mean free path	05/12/2018 06/12/2018
02	Transport Phenomena, Viscosity	07/12/18,08/12/18
03	Thermal conductivity and diffusion	12/12/18,13/12/18
04	Problems	14/12/18,15/12/18
05	**Ch-2- Maxwell's relations and applications** Thermodynamic functions	19/12/18,20/12/18
06	Enthalpy, Entropy, Internal Energy, Helmholtz Functions	26/12/18,27/12/18
07	Maxwell's relations	2812/18,29/12/18
08	First and Second TdS equations	02/01/19,04/01/19
09	Joule – Thomson's effect, Problems	05/1/19,09/1/19
10	**Ch-3- Elementary Concepts of Statistics** Probability distributions, functions	10/1/19,11/1/19 12/1/19
11	Random Walk Problem and Bionomial distribution	16/1/19,17/1/19
12	Simple Random Problem	18/1/19,19/1/19
13	Probability distribution for large N	24/1/19,25/1/19
14	Gaussian Probability distribution and Problems	30/1/19,31/1/19
15	**Ch-4- Statistical distribution of system of particles** State of Systems, Ensembles	06/2/19,07/2/19

16	Basic Postulates, Probability Calculations	08/2/19,12/2/19
17	Behavior of density of states	13/2/19
18	Thermal. Mechanical Interactions, Problems	24/2/19,15/2/19
Sr. No.	**Compeleted Topics**	**Dates**
19	**Ch-5- Statistical Ensembles** Micro canonical Ensembles, Canonical Ensembles	20/2/19,21/2/19
20	Applications of Canonical Ensembles	22/2/19
21	Molecules in ideal gas, Mean Values in Canonical Ensembles, Problems	23/2/19
22	**Ch-6-Quantum States** Quantum distribution function	1/3/19
23	Maxwell – Boltzman Statistics, Bose – Einstein Statistics	2/3/19,5/3/19
24	Fermi – Dirac Statistics, Comparisions,Problems	6/3/19

1) T.Y.B.Sc.:- Sixteen (16) Practical of **Two** batches completed in Academic Year 2018-2019.

2) Projects of T.Y.B.Sc Students.:- Projects of Eight (8) Students of T.Y.B.Sc. completed in Academic Year 2018-2019.

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