

Semester Diary

by

Prateek Singhal

Y11UC171



Preface

I joined The Laxmi Niwas Mittal Institute of Information Technology in 2011 for my Graduation. I am currently a first year B.tech student of Computer Science and Engineering (CSE).

In this report known as "Semester Diary" I kept the record of all the activities I did in my first semester. It includes the Academic courses I did, events in which I participated and other happenings that took place in our campus.

CONTENTS

- *Academics*

1. Maths - I
2. Physics - I
3. Computer Programming
4. Electronics - I
5. Physics Lab

- *Extra Curricular activities*

1. Sports
2. ROOBARU : Freshers party
3. PLINTH : Techno-Management Fest
4. IEEE : Student's chapter

Maths - I

Instructors :

- Dr. Akhlaq Husain.
- Dr. Pratibha Garg.

Syllabus:

- Real numbers, Sequences, Series, Power Series, Limit, Continuity, Differentiability, Mean Value Theorems and applications.
- Linear approximation, Newton and Picard method, Trapezoidal and Simpson's rule, Error bounds.
- Taylor's theorem (one variable), Approximation by polynomials, Critical points, Convexity, Curve tracing.
- Riemann integral, Fundamental theorems of integral calculus, Improper integrals.
- Space coordinates, Lines and planes, Polar coordinates, Graphs of Polar equations, Cylinders, Quadric Surfaces, Volume, Area, Length.
- Continuity, Differentiability of vector functions, Arc Length, Curvature, Torsion, SerretFrenet formulas.
- Functions of two or more variables, Partial derivatives. Statement (only) of Taylor's theorem for a function of two variables. Criteria for maxima/minima/saddle points. Applications of maxima/minima for functions of two variables.
- Multiple integrals: Double, Triple integrals, Fubini's theorem, Jacobians, Surface integrals, Vector calculus, Green, Gauss and Stokes theorem.

My Grade in Maths - I : *B*

Physics - I

Instructors :

- Prof. O.P. Katyal.
- Dr. Anupam Singh.
- Dr. Amit Neogi.

Syllabus:

- *Mechanics :*
 - Vectors, Kinematics, Plane and Spherical Co-ordinate systems.
 - Force, Newton's laws, Energy, Circular motion, Impulse, Momentum, Collisions.
 - Angular Kinematics, Moment of inertia, Rotational motion, Torque.
 - Central forces, Relativity, Harmonic motion.
- *Thermodynamics :*
 - Systems, Equations of States, Laws of Thermodynamics.
 - Turbine, Compressor, Boiler, Nozzle, Throttle, Condenser, Refrigerator.
 - Heat engine, Temperature Scale, Carnot Cycle.
- *Optics :*
 - Historical Development of optics, Mechanical, Plane, Electromagnetic Waves.
 - Poynting Vector, Superposition of waves, standing waves, Resonance.
 - Lasers, Interference, Wavefront, Newton's rings.

My Grade in Physics - I : A

Computer Programming

Instructor :

Subrat Kumar Dash.

Syllabus:

- Introduction to Problem Solving, Flow charts, Tracing flow charts, Sample Programs written in C .
- Identifiers and keywords, Data types, Declarations, Expressions, statements.
- Operators and expressions: Arithmetic, unary, logical, bit-wise, assignment and conditional operators
- While, do-while, for statements, nested loops, if else, switch, break, Continue, and goto statements, comma operators
- Storage class: Automatic, external, register and static variables.
- Functions: Defining and accessing, passing arguments, Function prototypes, Recursion, Library functions, Static functions.
- Arrays: Defining and processing, Passing arrays to a function, Multi dimensional arrays.
- Strings: Defining and operations on strings.
- Pointers: Declarations, Passing pointers to a function, Operations on pointers, Pointer Arithmetic, Pointers and arrays, Arrays of pointers function pointers.
- Structures: Defining and processing, Passing to a function, Unions, typedef, array of structure, and pointer to structure.
- File operation: creation, copy, delete, update, text file, binary file.

My Grade in Computer Programming : A

Electronics - I

Instructor :

Dr. Soumitra Debnath.

Syllabus:

- *Network Analysis:*
 - Kirchoff's Law, Thevenin and Norton Theorem, Superposition Theorem.
 - Complex Frequency, R-L, R-C, R-L-C, Circuits, Power Factor, Complex Power.
 - Laplace Transform, Frequency Response, Bode plots, Star-Delta, Cramer's Rule.
- *Op - Amp:*
 - Positive, Negative Feedback, Inverting, Non inverting Amplifiers, Voltage Follower, Loading effect.
 - Difference, Summing, Integrator, Differentiator Amplifiers, temperature Sensor.
 - Schmitt trigger, Oscillators.
- *Digital Circuits:*
 - Number systems: Binary, Octal, Decimal, Hexadecimal
 - Complements, Boolean algebra, Logic Gates, Truth Tables.
 - AND, OR, NOT, XOR, XNOR, NOR, NAND gates.
 - POS, SOP, K-Map, Half Adder, Full Adder, BCD to 7 segment display.
 - Sequential Circuits, Comparators, Decoder, Encoder, Multiplexer, Flip-Flops, Counters.

My Grade in Electronics - I : *B*

Physics Lab

Instructors :

- Prof. O.P. Katyal.
- Somnath Biswas.
- Dr. Amit Neogi.

Experiments:

- Introduction to measurement and analysis, Significant Figures, Error analysis.
- Moment of inertia of Wheel, Bar Pendulum.
- Fraunhofer Diffraction, Refractive Index of a Prism.
- Helmholtz Coil, Demonstration of eddy Currents.
- Phase velocity of Rope Waves, Adiabatic Module for Climate simulation.
- Gyroscope, Forced Damped Oscillations in LCR Circuits.
- Current Balance and Force acting on a current carrying Conductor.
- Electromagnetic Induction, Dependence of hall Coefficient on Temperature.
- Diffraction Grating, Measurement of Resistivity and Band gap of a semi conductor using four probe method.

My Grade in Physics Lab : *B*

Sports

The LNMIIT campus is provided with all the sports facilities. We have got Volley ball, Badminton, Table tennis, Football, Cricket, Basket Ball, etc. During my school life i was not very active in sports activities but after coming to The LNMIIT I got nice exposure to sports. I used to play badminton and table tennis.



Roobaroo '11

Roobaroo '11 was the freshers party of the Y11 batch. It was celebrated with great pump and show with the following events :

- Drama
- Dance and Music
- Fun activities like *Ice Break*
- Rock Band Performance



Plinth '11

Plinth '11 was the Techno-Management Fest. The following events are the key attractions of this event.

- Robotics
 - Robo race
 - Robo Soccer
 - Robo war
 - Line Follower
- Cyber events
 - Prison Break
 - IUPC
 - OS Mania
- Management
 - Cell with E-Cell
 - Ad-Mad
 - B-Plan
 - Economic Debate

I participated in IUPC-Intra University Programming Contest and secured 5th position.

IEEE Students Chapter '11

IEEE students chapter was introduced in The LNMIIT last year. It inspires the students toward Research in the engineering field. Many International level Conferences and Workshops are organised under the IEEE Students chapter at our campus like that of HTML5,Android,Microwaves,etc.



IEEE as a society is more popular for the volunteerism opportunities it provides to every individual member starting from the student member grade to fellow grade. *I also volunteered for the IEEE workshop organised by W3C India on HTML 5*