Summary of the Courses

2nd Year 1st Semester

Sl. No.	Course No.	Course Title	Theory hrs/week	Sessional hrs/week	Credits
1.	CSE-2110	Visual Programming Sessional	0	3	1.50
2.	CSE-2111	Object Oriented Programming	4	0	4.00
3.	CSE-2112	Object Oriented Programming Sessional	0	3	1.50
4.	EEE-2813	Electronic Devices & Circuits	3	0	3.00
5.	EEE-2814	Electronic Devices & Circuits Sessional	0	3/2	0.75
6.	Math-2411	Mathematics-III	4	0	4.00
7.	Ch-2415	Chemistry – II	3	0	3.00
8.	Ch-2416	Chemistry - II Sessional	0	3/2	0.75
9.	Hum-2413	Industrial Management & Accounting	4	0	4.00
		Total	**18**	**9**	**22.50**

Contact Hours: 18T + 9S = 27 hrs/week

Total credits: 22.50

No. of Theory Courses: 5

No. of Lab / Sessional courses: 4

CSE-2110 Visual Programming Sessional

3 Hours/ week **1.50 Credits**

Students will develop three programs/projects with proper documentation as assigned by teacher and will run on microcomputers.

CSE – 2111 Object Oriented Programming

4 Hours/ week **4.00 Credits**

Concepts of Object Oriented Programming, objects, polymorphism, inheritance, overloading.

C++: Classes, Array pointers and References, Function and operator overloading, passing object to functions, arrays of objects, pointer to objects, friend functions, Virtual Functions, Inheritance, I/O class library, Streams, Creating inserters and extractors, Formatting I/O, File I/O, Dynamic allocation using new and delete, Using command line compiler, compiling multiple file program.

Java: Overview of Java, Data Types, Operators, Control Statement, Packages and Interfaces, Exception Handling, Multithreading, I/O, Applet, Working with Windows, Graphics, Text and Swing Control, Networking, JDBC.

CSE – 2112 Object Oriented Programming Sessional

3 Hours/ week **1.50 Credits**

Sessional based on structured and Object Oriented Programming (CSE-2111).

EEE-2813 Electronic Devices & Circuits

3 Hours/ week **3.00 Credits**

Semiconductors, junction diode characteristics, bipolar characteristics. Small-signal low frequency h-parameter model, hybrid pie model. Amplifiers,

darlington pairs. Introduction to oscillators, differential amplifiers. Linear application of op-amp, gain, input and output impedance, offset null adjustment, frequency response and noise. Introduction to JFET, MOSFET, NMOS and CMOS, biasing and application in switching circuits, SCR, TRIAC, DIAC, UJT and their characteristics and applications. Introduction to rectifiers, active filters, regulated power supplies stabilizer and UPS. Basic ideas about IC fabrication techniques.

EEE-2814 Electronic Devices & Circuits Sessional

3/2 Hours/ week **0.75 Credits**

Sessional based on Electronic Devices & Circuits (CSE-2813).

Math-2411 Mathematics – III

4 Hours/ week **4.00 Credits**

Co-ordinate geometry of two dimensions: Change of axes, Transformation of co-ordinates, General equation of second degree, Simplification of equations of curves, (Circle, Parabola, Ellipse, Hyperbola).

General co-ordinate geometry of three dimensions: System of co-ordinates, Distance of two points, section formula, Direction cosines, Equations of planes and equations of straight lines.

Laplace Transform: Definition of laplace transform, Laplace transform of different functions, Inverse laplace transforms, Convolution, Evaluation of improper integrals by laplace transforms, Solution of differential equation by Laplace transforms.

Ordinary differential equation: Degree and order of ordinary differential equations, Formation of differential equations, Solutions of first order first degree differential equations by various methods, Solutions of general linear equations of second and higher orders with constant coefficients, Solution of linear equations of second and higher order with variable co-efficient.

Ch – 2415 Chemistry – II

3 Hours/ week **3.00 Credits**

Inorganic Chemistry: Quantum numbers, relationship among them, different rules/principles dealing with electron distribution in atom, Redox reaction and its balancing, Chemical bond: formation, conditions and properties of ionic, covalent, coordinate and metallic bond; van der Waals forces, hydrogen bond, polar pond, Fajan's rules, Lewis structure and formal charge calculation, theory of covalanvent bonding: Valence bond theory, hybridization, valence shell electron pair repulsion (VSEPR) model and molecular shape.

Physical Chemistry: Thermochemistry: Enthalpy of reaction, formation and combustion, laws of thermochemistry, Kirchoff's equation, Chemical equilibrium: Law of mass action, K_p and K_C , Le Chatelier's principle and its applications, Chemical Kinetics: rate, order, moleculatury of Chemical reaction, rate expression; Solution: its concentration units, Henry's law, Colligative properties: Raoult's law, depression of freezing point, elevation of boiling point, Osmosis: semipermeable membrane, reverse osmosis, laws of osmotic pressure, Distribution law: its derivaiton, application, effect of association and dissociation on it, Colloids: definition, classification and preparation, pH and buffer solution: Ionic products of water and concept of pH, pH of weak electrolytes and buffer solution.

Ch – 2416 Chemistry – II Sessional

3/2 Hours/ week **0.75 Credits**

Sessional based on Chemistry – II (Ch – 2415)

Hum-2413 Industrial Management and Accounting

4 Hours/ week **4.00 Credits**

Industrial management: Administration, Management and organization, Authority and responsibility, Scientific management, Organization structure, organization chart, Span of control, Selection and recruitment of employees; training and its types, promotion, wave system and incentive; job-evaluation

and merit rating, Plant layout, layout of physical facilities, Transportation and storage, Material handling, Maintenance, Maintenance policy, Production control in intermittent and continuous manufacturing industry, functions of production control, Purchasing procedures: Inventory-need and methods of control, Factors affecting inventory building-up, Economic lot size reorder point.

Accountancy: Basic accounting principles, Cash book, Trial Balance, Balance Sheet, Bank Reconciliation statement, Cost Account and objectives; Elements of a costs; Direct cost, Overhead allocation. Preparation of a cost sheet, Computation of break even point. Standard costing job order costing, Process costing, Cost Variance.