GIIT
PROFESSIONAL COLLEGE

(*Affiliated to* **KOLHAN UNIVERSITY, Chaibasa**)

STUDENT STUDY HAND - BOOK

(Academic Session: 2016 – 2019)

for

BACHELOR OF SCIENCE IN
INFORMATION TECHNOLOGY
(B.Sc.IT. | PART - I)

(VOCATIONAL COURSES)

COURSE - STRUCTURE								
ACADEMIC SESSION: 2016-2019								

Year	Paper Type		Paper Code	Group	Paper Description	Total Marks		Pass Marks	Exam Hours
						Internal Assignment	University Exam		
FIRST YEAR (PART – I)	**THEORY**	HONORS	1A	A	COMPUTER ORGANISATION ARCHITECTURE	-	50	23	3 Hrs.
				B	SYSTEM ANALYSIS AND DESIGN				
			2A	A	OPERATING SYSTEM	-	50	23	3 Hrs.
				B	LINUX OPERATING SYSTEM				
			3A	A	PROGRAMMING IN C	-	50	23	3 Hrs.
				B	DATA STRUCTURE USING C				
			4A	A	DATABASE USING FOXPRO	-	50	23	3 Hrs.
				B	DATA HANDLING METHODOLOGIES				
		SUBSIDIARY	1	-	MATHEMATICS	-	100	33	3 Hrs.
			2	-	CHEMISTRY/PHYSICS	-	75	23	3 Hrs.
		COMPOSITION	-	-	a) MIL HINDI or b) MIL NON-HINDI (**See note.**)	-	100	33	3 Hrs.
	PRACTICAL	HONORS	1B	-	MS – OFFICE AND HTML	25	25	23	3 Hrs.
			2B	-	MS – DOS AND UNIX	25	25	23	3 Hrs.
			3B	-	PROGRAMMING IN C	25	25	23	3 Hrs.
			4B	-	FOXPRO 2.6 FOR WINDOWS	25	25	23	3 Hrs.
		SUBSIDIARY	2B	-	CHEMISTRY/PHYSICS	5	20	10	3 Hrs.
SECOND YEAR (PART – II)	**THEORY**	HONORS	5A	A	NETWORKING DATA COMMUNICATION	-	50	23	3 Hrs.
				B	XML				
			6A	A	RELATIONAL DATABASE MANAGEMENT	-	50	23	3 Hrs.
				B	ORACLE				
			7A	A	PROGRAMMING IN C++	-	50	23	3 Hrs.
				B	ADVANCED C++				
			8A	A	VISUAL BASIC	-	50	23	3 Hrs.
				B	VB DATBASE PROGRAMMING				
		SUBSIDIARY	1	-	MATHEMATICS	-	100	33	3 Hrs.
			2	-	CHEMISTRY/PHYSICS	-	75	23	3 Hrs.
		COMPOSITION	-	-	a) MIL HINDI or b) MIL NON-HINDI (**See note.**)	-	100	33	3 Hrs.
	PRACTICAL	HONORS	5B	-	PRACTICAL IN XML	25	25	23	3 Hrs.
			6B	-	PROGRAMMING IN ORACLE	25	25	23	3 Hrs.
			7B	-	PROGRAMMING IN C++	25	25	23	3 Hrs.
			8B	-	PROGRAMMING IN VISUAL BASIC	25	25	23	3 Hrs.
		SUBSIDIARY	2B	-	CHEMISTRY/PHYSICS	5	20	10	3 Hrs.
THIRD YEAR (PART-III)	**THEORY**	HONORS	9A	-	WEB TECHNOLOGY using DHTML, JAVASCRIPT, ASP	-	50	23	3 Hrs.
			10A	A	CORE JAVA	-	50	23	3 Hrs.
				B	ADVANCED JAVA				
			12A	-	ENTERPRENUERSHIP DEVELOPMENT	100	-	23	3 Hrs.
	PRACTICAL	HONORS	9B	-	PRACTICAL IN DHTML, JAVASCRIPT, ASP	25	25	23	3 Hrs.
			10B	-	PRACTICAL IN JAVA	25	25	23	3 Hrs.
			11	A	On – Job – Training on 9B & 10B	50	-	23	-
				B	PROJECT WORK	50	-	23	-

Note : For Composition, candidate can choose option (A) or (B)
(a) M I L Hindi　　　　: One full paper of 100 marks for each of the Part – I and Part – II examination.
(b) M I L Non – Hindi　: Hindi – 50 marks and any one of the following language (50 marks) for each of the Part – I and Part – II Examination Bengali, Oriya, Urdu, Alt. English.

COURSE SYLLABUS and BOOK LIST		PART - I
Paper Code and Name	**Syllabus**	**Text and Reference Book**
IT01A Group A **Computer Organisation Architecture**	Ø U1-Number system, Binary numbers, signed and Assigned Numbers, 2's compliment numbers. Ø U2-Boolean algebra, De Morgan's Theorem, Simplification of Boolean expression, Karnaugh Map. Ø U3-Logic Gates, Truth Tables, Combinational Logic Circuits & Realization with Logic Gates - Half & Full Address & code, Multiplexers, Demultplexes, Encoders, Decoders, Codes Converters. Ø U4-Sequential Circuits, JK, RS, T, D, Master – Slaves Flip – Flop, Shift register, Synchronous, & Asynchronous Counters. Ø U5-Architecture of a simple computer, Microprocessor, Architecture of 8085/8086, Register & ALU, Instruction set, Addressing Modes, Timing diagram, Fetch, Decode & Execute Cycle, Interrupt Mechanism, DMA	**TEXT BOOK :** 1) Computer system Architecture, M Morris Mano – Pearson Education **REFERENCE BOOK:** Computer Organisation, Dr. Madhulika Jain, VineetaPillai, Satish Jain – BPB Publication
IT01A Group B **System Analysis and Design**	Ø **U-01:**Overview of Systems Analysis and Design, Ø **U-02**: System Development Life Cycle, Ø **U-03:** Project Section Sources of Project requests, Ø **U-04:** Preliminary Investigation. Ø **U-05:**Feasibility Study, Economic Feasibility, Ø **U-06:**Cost & Benefit Analysis, CPM, PERT. Fact Finding Techniques Ø **U-07:**Data Flow Diagrams, Data Dictionaries. Ø **U-08:**Detailed design, Modularization, Module Specifications, Fi Design. Ø **U-09:** System Testing, Unit & Integration, Testing, Test plans. S/w. selection criteria.	**TEXT BOOK :** 1) System Analysis and Design, E M Edward – BPB Publication **REFERENCE BOOK:** 1) System Analysis and Design, E M Awad, BPB Publication
IT02A Group A **Operating System**	Ø **U-01:**What is an Operating System? Simple batch systems, Multi–Programmed Batch Systems, Time Sharing Systems, Parallel Systems, Distributed Systems & Real Time Systems. Ø **U-02:** Computer System Structure – Computer System Operation, I/O structure storage structure, storage hierarchy and Hardware protection Ø **U03:** Operating System Structure System components, System services, system calls, system programs, & system structure simple stricture Ø **U-04:** Process concept: Process state, Process Control blocks, Process Scheduling & Schedulers, threading.	**TEXT BOOK :** 1) Operating System Concept, Abraham Silberschatz, Peter Baer Galvin - Prentice Hall of India

COURSE SYLLABUS and BOOK LIST		PART - I
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	Ø **U-05:** CPU scheduling, CPU – I/O burst cycle, scheduling criteria, scheduling algorithms (Non–pre– emptive – FCFS, SJF, Pre–emptive – SJF, RR) Ø **U-06:** Memory Management (Contiguous Allocation, Paging, Swapping, Segmentation). Virtual Memory – Demand Paging, Page Replacement, Page Replacement Algorithms (FIFO, LRU), Thrashing. Ø **U-07:** File System Structures, File Allocation (Contagious, Linked and Indexed), Free Space Management (bit vector, linked list, grouping, counting). Ø **U-08:** I/O Hardware, Polling, Interrupts, DMA, Spooling, Buffering. Ø **U-09:** Disk Structure, Disk Scheduling (FCFS, SSTF, SCAN), Disk Management Formatting boot block, bad block, swap space management. Ø **U-10:** Security – The problem, Authentication & Program, Threats, Encryption.	
IT02A Group B **Linux Operating System**	Ø LINUX System – Process management, Scheduling, Memory Management, file system, Input & Output, File structure, Incode, command shell programming. Ø NOVELL NetWare an introduction Ø WINDOWS NT - Design principles, system components, kernel, virtual memory manager, I/O manager, process manager, networking Ø Installation of Windows NT, setting up users & assignment of appropriate rights, File & directory permissions/rights sharing resources	**Text Book :** 1) College Hand Book
IT03AGroupA **Programming in C**	Ø **U-01: C Language Fundamentals:** Character Set, Keyword identifiers, constants, variables, strong class, Data types, Operato & expressions. Header files, Library files. Ø **U-02: Preprocessor directives**: # Include & # define Ø **U-03: Control Flow:** Selection & Iteration. Ø **U-04: Function :** User defines & Library functions Recursion vs. iteration. Ø **U-05: Pointer:** Near Far & Universal pointer, Structure & Union Ø **U-06: File Handling**	**TEXT BOOK :** 1) Let Us C, YashwantKanitka r – BPB Publication 2) Data Structure through C, YashwantKanitka r – BPB Publication

COURSE SYLLABUS and BOOK LIST		PART - I
Paper Code and Name	**Syllabus**	**Text and Reference Book**
IT03A Group B **Data Structure in C**	Ø **U7 - Data Structure Fundamentals:** Definition of Data structure & Storage structure, Classification of Data structures, Selection of Data structure Ø **U8 - Arrays (vectors & matrices):** Vector (1-Darrays), Rows major & Column-major storage of matrix, Addition of two matrices, Multiplication of two matrices, Character array vs. Strings Ø **U9 - Stacks :** Array implements, Linked list implementation, Postfix, Prefix & Infix Notation, Evaluation of postfix/prefix expression, Ø **U10 - Queues :** Array implementation, Linked-list implementation Ø **U11 - Linked Lists:** Single, Double and circularly linked list. Ø **U12 - Graphs:** Nomenclature, Adjacency lists, Adjacency matrix representation of graph. Ø **U13 - Trees:** Definition, Properties of Binary tree, **Pre-order**: In-order, Post order, Level order, Traversal of binary tree, Binary search tree. Ø **U14 - Sorting :** Bubble, Insertion, Quick & Merge Sort Ø **U15 - Searching:** Sequential search, Binary Search.	**Text Book :** 1) Data Structure through C, YashwantKanitkar – BPB Publication
IT04B **Database using FoxPro**	Ø Introduction to FoxPro, Commands, Ø Creating a Database, Creating Tables, Ø Viewing and Editing Data, Ø Creating Forms, Ø Querying Database, Ø Creating reports and design (Release 2.6 "FoxPro for Windows")	**Text Book :** College Hand Book
IT04A **Data Handling Methodology**	Ø **U-01: Data Handling-** Problems Hypothesis,U2- Constructs, Variables, U3- Definitions, Sampling Techniques Ø **U-04: Data Collection**Observation of Behaviour, Questionnaire Design & administration interviews. Ø **U-05: Data Tabulation**Analysis and interpretation, Regression Analysis,U6- Cluster Analysis, Factor Analysis, Discriminate Analysis, Content Analysis Ø **U-07: Hypothesis**Testing and Analysis of Variance, Multiple Analysis and other multivariate methods, U8- Chi – Square Test	**Text Book :** College Hand Book

COURSE SYLLABUS and BOOK LIST	PART - I

Paper Code and Name	Syllabus	Text and Reference Book
ITS01 **Mathematics**	**DIFFERENTIAL CALCULUS** Ø **U1**- Successive differentiation, Ø **U2**- Leibnitz theorem Ø **U3**- Expansion, **U4**- Partial differentiation Ø **U5**- Tangent and normal, Ø **U6**- Curvature. Ø **U7**- Asymptotes. Ø **U8**- Maxima and Minima of functions of two variables **INTEGRAL CALCULUS** Ø **U9**- Integration of rational and irrational functions. Ø **U10**- Evaluation of definite integral, Ø **U11**- Reduction formula Ø **U12**- Curve tracing, Ø **U13**- tenth and area. Ø **U14**-Volume and surface area of solids of revolution. **VECTOR** Ø **U15**- Point Functions, Ø **U16**- Differentiation of a Vector Function of a Scalar Variable Ø **U17**- Gradient, Divergence and curl Ø **U18**- Second order operators in Cartesian co-ordinate system **CO-ORDINATE GEOMETRY OF TWO DIMENSION** Ø **U19**- Change of rectangular axis. Ø **U20**- Conditions for the general equation of second degree to represent parabola, Ellipse and hyperbola and reduction into standard forms. Ø **U21**- Polar and pair of tangents in reference to general equation of conic. Ø **U22**- Polar equation **Real Analysis** Ø **U23**- Axioms for the real number system, bounds, closed, open and compact sets. Ø **U24**- Limit of a sequence, monotonic sequence, and their convergence, limsup&liminf, sum sequence, algebraic operations and limit. Ø **U25**- Cauchy sequence, general principle of convergence Ø **U26**- Notion of Convergent& divergent series of real terms, Ø **U27**-Pringshim's theorem, Comparison tests, Ø **U28**- Cauchy's root test, Ø **U29**- D' Alembert's ratio test, Ø **U30**-Alternating series and Leibnitz test Absolutely convergent series	**Text Book s:** 1) Differential Calculus, Lalji Prasad 2) Integral Calculus, Lalji Prasad 3) Vector Analysis – Dr.Lalji Prasad 4) Co-ordinate geometry of two dimension - Das Gupta 5) Real Analysis – Dr.Lalji Prasad **Reference Books:** 1) Differential Calculus - B. C. Das and Mukherjee 2) Integral Calculus - B. C. Das and Mukherjee 3) Vector Analysis - Das Gupta 4) Co-ordinate geometry of two dimension - Das Gupta Real Analysis - Das Gupta

COURSE SYLLABUS and BOOK LIST		PART - I
Paper Code and Name	**Syllabus**	**Text and Reference Book**
ITS02 <u>**Chemistry**</u>	<u>**UNIT 1**</u> Ø **Atomic Structure:** Bohr's Atomic Model, Introduction to Spectral lines, Hydrogen atom, Quantum numbers, Aufbau's principle, Pauli's Exclusion Principle, Hund's rule Problems Ø **Periodicity:** Electronic lay-out of the periodic table Periodicity of properties e.g. ionic, covalent and van-der Waal's radii, ionization potential, electron affinity and Electro negativity <u>**UNIT 2**</u> Ø **Shape & structure of organic compounds**. Tetracovalency of carbon. Hybridization (spa, sp2 &sp). Ø **Classification and nomenclature of organic compounds,** Detection and estimation of elements, determination of molecular weight. Ø **Elementary idea of electron displacement effect**: inductive effect, electrometric effect, resonance and mesomeric effect <u>**UNIT 3**</u> Ø **Dilute Solution:** Colligative properties, Osmosis& Osmotic pressure, Lowering of vapour pressure, Elevation of boiling points, Depression in freezing point <u>**UNIT 4**</u> Ø **General Chemistry** of Group I B, II A, II B elements Ø **Extraction of the following elements:** Silver, Gold, Boron, Tin, Lead <u>**UNIT 5**</u> Ø **Alcohols:** Definition, Classification and Distinction between different types of alcohols. Ø **Trihydricalcohoi-glycerol**: (i) Total Synthesis from C and H (ii) Reactions <u>**UNIT 6**</u> Ø **Thermodynamics:** System and Surrounding, Types of system, Heat, Work and Internal energy. First law of Thermodynamics, Enthalpy, Heat Capacities, Relation between Cp and Cv. Calculation of W, Q, E and H in iso-thermal) and adiabatic expansion of gases. Ø **Thermo chemistry:** Hess's Law, Kirchhoff's Law, Bond energies and their calculation <u>**UNIT 7**</u> Ø **Preparation Properties, structure and use of the following corn pounds:** Hydrogen peroxide, Ozone, Silicon, Lunar-caustic, Purple of Cassius, Fulmination Gold, Stannous Chloride, While Lead Borax, Diborance, Red Lead	<u>**Text Book :**</u> 1) NCERT Chemistry Book PART (1 &2) (1ST YEAR 2ND YEAR BOTH 2) Reaction Mechanism of Organic Chemistry - Mukul C Ray Reference Book Inorganic Chemistry Ø Principles of Inorganic Chemistry - Puri Sharma and Kalia Ø Organic Chemistry O.P TANDAN Ø Reaction mechanism by SANYAL

COURSE SYLLABUS and BOOK LIST		PART - I
Paper Code and Name	**Syllabus**	**Text and Reference Book**
	UNIT 8 Ø **Aldehydes and Ketones**: General Methods of Preparation, Properties, Electronic nature of C = 0 Group Ø **Carboxylic acids**: General methods of preparation, Properties of monocarboxylic acid and their derivatives (ester, acid chloride, an-hydride, and amide),Origin of acidic properties and electronic nature of COOH acid group its derivatives **Unit 9** Ø **Chemical Equilibrium :**Law of mass Action and its kinetic derivation, Equilibrium constant Relation between Kp, Kc and Kx, Le-Chalelier's Principle **PHYSICAL CHEMISTRY** **UNIT 10** Ø **Gaseous State**: Kinetic theory of gases-Postulates, Kinetic gas equation, Deduction of gas laws from kinetic gas equation, R.M.S. Velocity, Aver-age velocity and Kinetic Energy of Gas molecules, Deviations from ideal behavior. Vender Waal's equation of state	Ø
IT01B **Ms-Office and HTML**	Ø Slide Making and presentation using MS – PowerPoint (MS – Office 2000) Ø Editing, Mail merge and macro using MS-Word 2000 (MS – Office 2000) Ø Spreadsheet, Worksheet Application using MS – Excel (MS – Office 2000) Ø Internet, Email, How it works, sending an email message, understanding E–Mail Message, E–Mail Address, Website Address. Ø History of Internet, How web works, Connecting Web Browser, Domain Search Engines. Ø HTML: What is HTML, Ø Components of HTML - Tags, Attributes, Editors, Tag in HTML - <Doctype>, <HTML> Ø TITLE : <BODY>tag, Heading, paragraph, line break tag, , Lists, Horizontal rules, Ø Adding colors, specifying font & font sizes, anchor tag, adding images to HTML, documents, adding rows & columns Ø Creation of HTML pages using suitable tags, Inserting pictures, Link to other pages, Colour effects, Tables with multiple	Lab assignments

COURSE SYLLABUS and BOOK LIST		PART - I
Paper Code and Name	**Syllabus**	**Text and Reference Book**
IT02B **Ms - DOS and Unix**	Ø Creation of Batch File Ø Extension of DOS Commands - CLS, MD, RD, DATE, TIME, VER, COPY, REN, DEL, TYPE, PATH, PROMPT, LABEL, DIR, XCOPY, DISK COPY, DELETREE. Ø Unix Commands: ls, pwd, who, whoami, cd, mkdir, date, cal, banner, cp, my, rmdir, chmod, man, cat.	Lab assignments
IT04B **FoxPro Programming**	Ø Design of a database for a business application, design of data entry forms and reports layouts for this databases Ø Creation of programs to access and manipulate database using FoxPro.	Lab assignments
ITS2B **Chemistry Lab**	Ø Qualitative inorganic analysis of mixture containing four radicals : Basic Radicals : Pb^{2+}, CU^{2+}, Bi^{3+}, Cd^{2+}, Sn^{2+}, Sn^{4+}, Fe^{3+}, AI^{3+}, C^{3+}, Ni^{2+}. Co^{2+}. Zn^{2+}. Mn^{2+}, Ca^{2+}, Ba^{2+}. Sr^{2+}, Mg^{2+}, Na^{2+}. K. NH4, Acid Radicals : $CO3-$, $S03$, $S02$, $S2$, $NO2$; $NO3$ Halides Ø Volumetric Analysis Acidimetry and Alkalimetry,Use of Potassium permanganate, Potassium dichromate, and Sodium Thiosulphate in the estimation of Fe", Oxalic acid, $Cu++$ Ø Note Book Ø Viva-voice (Q1-12 marks (Basic-8, Acid-4) Q2-9 marks. Notebook + Viva-voice-2+2)	Lab assignments
Composition **MIL Hindi**	Ø ' Ø ' ' Ø ' ' Ø ' ' Ø ' ' Ø ' ' ' ' ' ' Ø ' '	Ø , – Ø : . Ø : Ø : Ø : Ø : Ø : Ø : Ø :