GIIT

PROFESSIONAL COLLEGE

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

STUDENT STUDY HAND - BOOK

(Academic Session: 2016 – 2019)

FOR

BACHELOR OF COMPUTER APPLICATION
(BCA, Semester - 1)

(VOCATIONAL COURSES)

COURSE - STRUCTURE

Sem.	Name of Papers	Type of Paper	Internal	External	Full Marks	Pass (%) Marks	Credit
I	Mathematics	Theory	30	70	100	45	4
	Introduction to Computer Science	Theory	30	70	100	45	4
	Programming in C	Theory	30	70	100	45	4
	Communication skills/Technical English	Theory	30	70	100	45	4
	C and IT Lab	Practical	30	70	100	45	4
II	Data Structures & C++	Theory	30	70	100	45	4
	Probability & Statistics	Theory	30	70	100	45	4
	Logic Design	Theory	30	70	100	45	4
	Managerial Economics	Theory	30	70	100	45	4
	Data Structure & C++ Lab	Practical	30	70	100	45	4
III	Scientific Computing	Theory	30	70	100	45	4
	Software Engineering Principles	Theory	30	70	100	45	4
	Relational Database Management Systems	Theory	30	70	100	45	4
	Operating System and Linux Programming	Theory	30	70	100	45	4
	OS (Linux) And RDBMS (Oracle) Lab	Practical	30	70	100	45	4
IV	Data Communication and Computer Network	Theory	30	70	100	45	4
	Object Oriented Programming in JAVA	Theory	30	70	100	45	4
	Programming in Visual Basic	Theory	30	70	100	45	4
	LAB of JAVA	Practical	30	70	100	45	4
	LAB Visual Basic	Practical	30	70	100	45	4
V	Electronic Commerce and Application	Theory	30	70	100	45	4
	Web Technology	Theory	30	70	100	45	4
	Computer Graphic and Multimedia	Theory	30	70	100	45	4
	Web Technology and Multimedia (HTML, XML, JavaScript, ASP.Net)	Practical	30	70	100	45	4
	Computer Graphics & Multimedia LAB (Graphics, 2D Animation, Multimedia)	Practical	30	70	100	45	4
VI	Elective Paper	Theory	30	70	100	45	4
	Distributed Computing	Theory	30	70	100	45	4
	Accounting and Finance Management	Theory	30	70	100	45	4
	LAB of Elective Papers	Practical	30	70	100	45	4
	PROJECT	Practical	30	70	100	45	4
List of Electives:		**Total Marks**			**3000**	**Total Credit**	**120**

A) Agile Software Development Process
B) Data Mining and Warehousing System
C) Programming
D) Distributed Database System
E) Decision Support System

COURSE SYLLABUS and BOOK LIST		Semester - I
PaperCode and Name	**Syllabus**	**Text and Reference Book**
BCA101 **Mathematics**	**Differential Calculus:** U1-Successive differentiation, U2- Leibnitz Theorem, U3 Taylor'stheorem with Lagrange's forms of remainders, U4 Expansion of a function of onevariable in Taylors and Maclanrin's infinite series. U5Maxima and Minima of onevariable, U6partial Derivatives, U7 Euler's theorem, change of variables, U8 U9 totaldifferentiation,U10 Errors and approximation. U11 Taylor's series in two variables. U12 Maximaand Minima of two or more Variables. **Integral Calculus:** U13 Definite integral and its application for area, U14 length and volume U15 .Multiple integrals. U16 Change of order of integration. Transformation of integral from Cartesian to polar. U17 Applications in areas, volume and surfaces. **Differential Equation:** U18 First degree and first order Differential equation: U19 Higherorder differential equation with constant coefficients. U20 Linear partial differentialequation of first order P.D.E. of higher with constant coefficients.	**Text Book:** 1) Differential Calculus by Dr.Lalji Prasad 2) Integral calculus by Dr.Lalji Prasad **3)** Differential Equation by Dr.Lalji Prasad **Reference Books:** 1) Das BC and Mukherjee, Differential Calculus, Calcutta, U.N. Dhar Publishers. 2) Das BC and Mukherjee, Integral Calculus, Calcutta, U.N. Dhar Publishers. 3) Grewal B.S., Higher Engineering Mathematics, Delhi Khanna Publishers. **4)** Rajput B.S., Mathematical Physics
BCA102 **Introduction to Computer Science**	**U1- Introduction to Computers:** Introduction, Characteristics of computers, Evolution of computers, Generation of Computers, Classification of Computers, The Computer System, Applications of Computers. **U2- Number Systems And Logic Gates:** Introduction, Number Systems, Conversion between Number Bases, Arithmetic System, Signed and Unsigned Numbers, Concept of Overflow, Binary Coding, Logic Gates, Boolean algebra, Combination of Logic Gates. **U3- Computer Architecture:** Introduction, Central Processing Unit (CPU) Memory, Communication between Various Units of a Computer System, The Instruction Format, Instruction Set, Processor Speed, Multiprocessor Systems. **U4- Primary Memory & Secondary storage:** Introduction, Memory Hierarchy, Random Access Memory (RAM), Types of RAM, Read Only Memory (ROM), Types of ROM. Introduction, Classification of Secondary Storage Devices, Magnetic Tape, Magnetic Disk, Optical Disk, Magneto Optical disk. **U5- Input Devices & Output Devices:** Introduction, Keyboard, Pointing Devices, Speech Recognition, Digital Camera, Scanners, Optical Scanners. Introduction, Classification of Output, Hard Copy Output Devices, Printers, Plotters, Computer Output Microfilm (COM), Soft Copy Output Devices, Monitors, Audio Output, Projectors, Terminals. **U6- Computer Program, Computer Languages, Computer Software:** Introduction, Developing a Program, Algorithm, Flowchart, and Pseudo code (PCode).Introduction, Evolution of Programming Languages, Classification of Programming Languages, Generations of Programming Languages, Features of a Good Programming Language, Selection of a Programming Language. Introduction, Software: Definition, Relationship between Software and Hardware, Software Categories, System Software, Application Software, Software Terminology.	**Text Book:** 1) Introduction to computer Science, ITL Education solution Limited, R&D Wing, PEARSON Education, Edition 2004 **Reference Book:** 1) Rajaraman V. – Fundamental of Computers, Prentice Hall of India Pvt. Ltd.,New Delhi – 2nd edition, 1996.

COURSE SYLLABUS and BOOK LIST		Semester - I
PaperCode and Name	**Syllabus**	**Recommended and Reference Book**
	U7- Operating System: Introduction, Operating System, Evolution of Operating System, Types of Operating System, Functions of an Operating System, Modern Operating Systems. **U8- Data Communication and Computer Network, Internet Basics:** Introduction, Data Communication, Transmission Media, Multiplexing, Switching, Computer Network, Network Topologies, Communication Protocols, Network devices. Introduction, Evolution of Internet, Basic Internet Terms, Getting Connected to Internet, Internet Applications, Electronic Mail: An Introduction How E-Mail Works, Searching the Web (Search Engines), Languages of Internet, Internet and Viruses.	
BCA103 Programming in C	**U1- History and Importance of C**, Sample programming, Basic Structure and execution of C Programmes, Constants, Variables, and Data Types and various types of declarations, Different type operators and Expressions, Evaluation of Expressions, Operator Precedence and Associability, Mathematical Functions. **U2- Managing Input and Output operations**, Decision Making and Branching Decision Making and Looping. **U3- Arrays, Strings and Function:** One – dimensional Arrays and their declaration and Initializations, Two-dimensional Arrays and their initializations, Multidimensional Arrays, Dynamic Arrays, String Variables, Reading and Writing Strings, Arithmetic Operations on characters, Putting Strings together, Comparison of Two Strings, String – handling functions, Table and other features of Strings. **U4- Need and Elements for user** –defined Functions, Definition of Functions, Return values and their types, Function calls and Declaration, Arguments and corresponding return values, Functions that return multiple values, Nesting of functions, Recursion, Passing arrays and strings to functions, The Scope, Visibility and Life time of variables. **U5- Defining Structure**, Declaring Structure Variable and Accessing Structure Members, Initialization of Structure, Comparing Structure Variables, Operation on Individual Members, Arrays of Structures, Structures within structures, Structures and Functions, Unions, Size of Structures, Bit Fields. **U6 - Understanding Pointers**, Accessing the Address of a Variable, Declaration and Initialization of Pointer Variables, Accessing a Variable through its Pointer, **U7- File Management in C**	**Text Book:** 1) Programming in ANSI C By E. Balagurusamy –, 3rd Edn. , TMH, New Delhi; 2004 **Reference:** 1) Programming with C, B.S.Gottfried (TMH) 2) Y. Kanetkar – Let us C, 4th Edition, BPB Publication , New Delhi; 2002 3) Y. Kanetkar Pointer in C
BCA104 Communication Skills and Technical Skills	**U1-Introduction:** Definition, Objectives, Stages of Communication, Essentials of Good/Effective Communication, Benefits of Good Communication, Gaps in Communication, Communication and Information Technology. **U2-Business Correspondence:** Structure of a Letter, Inquiry Letter, Sales Letter, Order Letter, Complaints, Complaint Handling, Telemarketing. **U3-Government Correspondence:** Noting, Routine Letter, Demi-Official Letter Memorandum, Circular, Telegrams, Newsletter. **U4-Writing Skills:** Report Writing, Scientific Paper Writing, Writing Small Paragraphs & Essays, Composition. **U5-Grammar:**Sentence Structure, Idiomatic Usage of Language, Tenses, Direct & Indirect Parts of Speech, Active & Passive Voice, Vocabulary. **U6-Selected Short Stories:** 2-3 classic short stories, 2-3 great short stories by Indian writers. **U7-Preparation for Job:** Writing Applications for Jobs, Preparing Curriculum Vitae, Preparing for Interviews, Preparing for Group Discussions.	**Text Books:** College Hand Book **Reference Book:** 1) Human Behavior at Work; John W Newstorm& Keith Davis; Tata McGraw Hill. 2) The Most Common Mistakes in English Usage; Thomas Elliot Berry, Tata McGraw Hill