

2019-20

Title	Syllabus Distributions
Session	2019-20 (Even Semester)
Department	B.Sc General in Computer Science
Institution Name	Hiralal Bhakat College, Nalhati, Birbhum, W.B.
Coordinator	Sk Abdul Hanif, SACT in Computer Science

Details of Courses of B.Sc. General under CBCS

Sl.	Course	Credit		Marks
1.	Core Course (12 Papers) 4 core papers each in 3 disciplines of choice	Theory+Practical $12 \times (4+2) = 72$	Theory+Tutorial $12 \times (5+1) = 72$	$12 \times 75 = 900$
2.	Elective Course DSE (6 Papers)	$6 \times (4+2) = 36$	$6 \times (5+1) = 36$	$6 \times 75 = 450$
3	Ability Enhancement Core Course (AECC) AECC-1 (ENVS) AECC-2 (English/MIL)	$4 \times 1 = 4$ $2 \times 1 = 2$	$4 \times 1 = 4$ $2 \times 1 = 2$	100 50
4.	SEC (4 Papers)	$4 \times 2 = 8$	$4 \times 2 = 8$	$4 \times 50 = 200$
	Total Credit:	122	122	1700

B.Sc. Computer Science General Course Structure

Semester	Course Course (CC)	Discipline Specific Elective (DSE)	Ability Enhancement Course	
			AECC (2)	SEC (4)
I	CC1A (Mathematics) CC2A (Physics) CC3A (Computer Sc.)		AECC-1	
II	CC1B (Mathematics) CC2B (Physics) CC3B (Computer Sc.)		AECC-2	
III	CC1C (Mathematics) CC2C (Physics) CC3C (Computer Sc.)			SEC-1 (Mathematics) or SEC-1 (Computer Sc.)
IV	CC1D (Mathematics) CC2D (Physics) CC3D (Computer Sc.)			SEC-2 (Mathematics) or SEC-2 (Computer Sc.)
V		DSE1A (Mathematics) DSE2A (Physics) DSE3A (Computer Sc.)		SEC-3 (Computer Science) or SEC-3 (Physics)
VI		DSE1B (Mathematics) DSE2B (Physics) DSE3B (Computer Sc.)		SEC-4 (Computer Science) or SEC-4 (Physics)

Semester-II

Core Course (CC 3B): Database Management Systems

SEMESTER – II

Course code	Course title	Credit	No of Hours		
			L	T	P
CC-1B	Database Management Systems	4-0-2=6	4	0	4
	Discipline 2	6			
	Discipline 3	6			
	AECC 2: ENG/MIL	2			
		20			

Syllabus	Number of Lecture	Course	Name of Teacher
Introduction to Database Management Systems: Characteristics of database approach, data models, DBMS architecture and data independence.	10 L	CC	Sk Abdul Hanif
Entity Relationship and Enhanced ER Modeling: Entity types, relationships, SQL- 99: Schema Definition, constraints, and object modeling.	15 L		
Relational Data Model: Basic concepts, relational constraints, relational algebra, SQL queries.	15 L		
Database design: ER and EER to relational mapping, functional dependencies, normal forms up to third normal form. .	20L		
DDL Commands • Create table, alter table, drop table DML Commands • Select , update, delete, insert statements • Condition specification using Boolean and comparison operators (and, or, not,=,<>,>,<,>=,<=) • Arithmetic operators and aggregate functions(Count, sum, avg, Min, Max) • Multiple table queries (join on different and same tables) • Nested select statements • Set manipulation using (any, in, contains, all, not in, not contains, exists, not exists, union, intersect, minus, etc.) • Categorization using group by.....having • Arranging using order by		Practical	Sk Abdul Hanif

Reference Books:

1. R. Elmasri, S.B. Navathe, Fundamentals of Database Systems 6th Edition, Pearson Education, 2010.
2. Database System Concepts - Henry F. Korth
3. R. Ramakrishnan, J. Gehrke, Database Management Systems 3rd Edition, McGraw-Hill, 2002.
4. A. Silberschatz, H.F. Korth, S. Sudarshan, Database System Concepts 6th Edition, McGraw Hill, 2010.
5. R. Elmasri, S.B. Navathe Database Systems Models, Languages, Design and application Programming, 6th Edition, Pearson Education, 2013.

Semester-IV

Core Course (CC 3D) : Computer System Architectur

SEMESTER – IV

Course code	Course title	Credit	No of Hours		
			L	T	P
CC-1D	Computer System Architecture	4-0-2=6	4	0	4
	Discipline 2	6			
	Discipline 3	6			
SEC-2 (Computer Science)	HTML Programming OR XML Programming	1-0-1=2	1	0	2
		20			

Syllabus	Number of Lecture	Course	Name of Teacher
Introduction: Logic gates, boolean algebra, combinational circuits, circuit simplification, flip-flops and sequential circuits, decoders, multiplexors, registers, counters and memory units. Data Representation and basic Computer Arithmetic: Number systems, complements, fixed and floating point representation, character representation, addition, subtraction, magnitude comparison.	20 L	CC	Sk Abdul Hanif
Basic Computer Organization and Design: Computer registers, bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and interrupt.	18 L		
Central Processing Unit: Register organization, arithmetic and logical micro-operations, stack organization, micro programmed control.	10 L		
Programming the Basic Computer: Instruction formats, addressing modes, instruction codes, machine language, assembly language, input output programming. Input-output Organization: Peripheral devices, I/O interface, Modes of data transfer, direct memory access.	12 L		
Computer System Architecture Lab		Practical	Sk Abdul Hanif

Books Recommended:

1. M. Mano, Computer System Architecture, Pearson Education 1992.
2. A. J. Dos Reis, Assembly Language and Computer Architecture using C++ and JAVA, Course Technology, 2004
3. W. Stallings, Computer Organization and Architecture Designing for Performance, 8th Edition, Prentice Hall of India ,2009
4. Digital Design, M.M. Mano, Pearson Education Asia, 1979

Skill Enhancement Course (SEC-2) : HTML Programming

Syllabus	Number of Lecture	Course	Name of Teacher
Unit-I: Introduction Unit-II: The Basics Unit-III: Links Unit-IV: Images	11 L	SEC	Sk Abdul Hanif
Unit V: – Tables Unit VI – Forms	9 L		
Software Lab Based on HTML		Practical	Sk Abdul Hanif

Book Recommended:

1. Introduction to HTML and CSS -- O'Reilly , 2010
2. Jon Duckett, HTML and CSS, John Wiely, 2012

**Coordinator
Science Wing
Hiralal Bhakat College**

**Head
Department of Comp.Science
Hiralal Bhakat College
Nalhati, Birbhum**

Signature,
Teacher-in-Charge
Hiralal Bhakat College
Nalhati, Birbhum.



**Teacher-in-Charge
Hiralal Bhakat College
Nalhati, Birbhum**