

2022-2023

Title	Modules of Syllabus, Classes and Examinations
Session	2022-23 (Odd 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-I

Core Course (CC 3A): Problem Solving using Computer

- Total 75 Marks
- 60 Marks for Semester-end-Examination# (will be organized by University)
- 10+5=15 Marks for Internal Assessment (will be organized by College in general and Department in Particular)
- 10 Marks for Class Test/ Assignment/ Seminar
- 5 Marks for Attendance

Attendance: 50% & above but below 60% - 2 Marks

Attendance: 60% & above but below 75% - 3 Marks

Attendance: 75% & above but below 90% - 4 Marks

Attendance: 90% & Above - 5 Marks

Internal Assessment	Component 1 (C ₁)
Weightage	10 Marks
Number of Questions	5
Date	07-12-2022
Time	12.30pm
Syllabus	Introduction to Computers, Basic Computer Organization, Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.
Name Of the Teachers	Sk Abdul Hanif
Number Of Classes	70 (Tentative)

#Component 2 (C₂)

➤ Whole Syllabus of CC 3A

Introduction to Computers, Basic Computer Organization, Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation. Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming. Input and Output Statements, Control statements (Looping- while loop, for loop , loop Control, Conditional Statement, if...else , Difference between break, continue and pass).

➤ Theory (**Problem Solving using Computer**) = 40 Marks

Answer 05 questions out of 08 carrying 02 marks each = $05 \times 02 = 10$ marks

Answer 02 questions out of 04 carrying 05 marks each = $02 \times 05 = 10$ marks

Answer 02 questions out of 04 carrying 10 marks each = $02 \times 10 = 20$ marks

➤ Practical (Software Lab using Python) = 20 Marks

Laboratory Note Book: 05 Marks

Viva- voce: 05 Marks

Experiment: 10 Marks

➤ A project File (Minimum 10 Programs) is to be submitted.

Semester-III

Core Course (CC 3C) : Operating Systems

- Total 75 Marks
- 40 Marks Theory for Semester-end-Examination# (will be organized by University)
- 20 Marks Of Practical for Semester-end-Examination# (will be organized by University)
- 10+5=15 Marks for Internal Assessment (will be organized by College in general and Department in Particular)
- 10 Marks for Class Test/ Assignment/ Seminar
- 5 Marks for Attendance
 - Attendance: 50% & above but below 60% - 2 Marks
 - Attendance: 60% & above but below 75% - 3 Marks
 - Attendance: 75% & above but below 90% - 4 Marks
 - Attendance: 90% & Above - 5 Marks

SEC-1 : Office Automation Tools

- Total 40 marks *(will be organized by College in general and Department in Particular)
- 10 Marks for Class Test/ Assignment/ Seminar (will be organized by College in general and Department in Particular)

Internal Assessment	Component 1 (C ₁)	Component 2 (C ₂)
Weightage	5 Marks	10 Marks
Paper	CC	SEC
Number of Questions	5	5
Date	16-11-2022	16-11-2022
Time	12.30pm	1.30pm
Syllabus	Types of operating systems - - Multiprogramming, Batch, Time Sharing, Single user and Multiuser, Process Control & Real Time Systems. Operating System Organization: Factors in operating system design, basic OS functions, implementation consideration; process modes, methods of requesting system services – system calls and system programs.	Word Processing: Formatting Text, Pages, Lists, Tables Spreadsheets: Worksheets, Formatting data, creating charts and graphs, using formulas and functions, macros, Pivot Table Presentation Tools: Adding and formatting text, pictures, graphic objects, including charts, objects, formatting slides, notes, hand-outs, slide shows, using transitions, animations
Name Of the Teachers	Sk Abdul Hanif	Sk Abdul Hanif
Number Of Classes	71 (Tentative)	20 (Tentative)

#Component 3 (C₃)

➤ Whole Syllabus of CC 3C

Types of operating systems Multiprogramming, Batch, Time Sharing, Single user and Multiuser, Process Control & Real Time Systems. Operating System Organization: Factors in operating system design, basic OS functions, implementation consideration; process modes, methods of requesting system services – system calls and system programs. Scheduling: Scheduling Mechanisms, Strategy selection, non-pre-emptive and pre-emptive strategies. Memory Management: Mapping address space to memory space, memory allocation strategies, fixed partition, variable partition, paging, virtual memory.

➤ Theory (Operating Systems) = 40 Marks

Answer 05 questions out of 08 carrying 02 marks each = $05 \times 02 = 10$ marks

Answer 02 questions out of 04 carrying 05 marks each = $02 \times 05 = 10$ marks

Answer 02 questions out of 04 carrying 10 marks each = $02 \times 10 = 20$ marks

➤ Practical (Software Lab based on Operating Systems) = 20 Marks

Laboratory Note Book: 05 Marks

Viva- voce: 05 Marks

Experiment: 10 Marks.

➤ A project File (Minimum 10 Programs) is to be submitted.

*Component 4 (C₄)

➤ Total 40 Marks of SEC paper will be conduct in practical examination.

➤ This 40 marks will be transformed into 2 Marks & 10 Marks Like :

Answer 05 questions out of 06 carrying 2 marks each = $05 \times 2 = 10$ marks

Answer 03 questions out of 04 carrying 10 marks each = $3 \times 10 = 30$ marks

Semester-V

DSE-3A : Programming in Java

➤ Total 75 Marks

➤ 40 Marks Theory for Semester-end-Examination[#] (will be organized by University)

➤ 20 Marks Of Practical for Semester-end-Examination[#] (will be organized by University)

➤ 10+5=15 Marks for Internal Assessment (will be organized by College in general and Department in Particular)

➤ 10 Marks for Class Test/ Assignment/ Seminar

➤ 5 Marks for Attendance

Attendance: 50% & above but below 60% - 2 Marks

Attendance: 60% & above but below 75% - 3 Marks

Attendance: 75% & above but below 90% - 4 Marks

Attendance: 90% & Above - 5 Marks

SEC-3 : Concepts of Software Testing

- Total 40 marks *(will be organized by College in general and Department in Particular)
- 10 Marks for Class Test/ Assignment/ Seminar (will be organized by College in general and Department in Particular)

Internal Assessment	Component 1 (C ₁)	Component 2 (C ₂)
Weightage	10 Marks	10 Marks
Paper	DSE	SEC
Number of Questions	5	5
Date	23-11-2022	
Time	12.30 pm	
Syllabus	Object Oriented Programming Concept Overview of Programming, Paradigm, Classes, Abstraction, Encapsulation, Inheritance, Polymorphism, Difference between C++ and JAVA. Java Programming Fundamental :Structure of java program, Data types, Variables, Operators, Keywords, Naming Convention, Decision Making (if, switch), Looping(for, while) ,Type Casting.	Strategic Approach to Software Testing, Test Strategies for Conventional Software, Validation Testing, System Testing, Basic Terminologies, V Shaped Software Lifecycle Model. Boundary Value Analysis, Equivalence Class Testing, Decision Table Based Testing
Name Of the Teachers	Sk Abdul Hanif	Sk Abdul Hanif
Number Of Classes	50 (Tentative)	100 (Tentative)

#Component 3 (C₃)

- Whole Syllabus of DSE-3A
Object Oriented Programming Concept Overview of Programming, Paradigm, Classes, Abstraction, Encapsulation, Inheritance, Polymorphism, Difference between C++ and JAVA. Java Programming Fundamental :Structure of java program, Data types, Variables, Operators, Keywords, Naming Convention, Decision Making (if, switch), Looping(for, while) ,Type Casting. Classes and Objects: Creating Classes and objects, Memory allocation for objects, Constructor, Implementation of Inheritance, Implementation of Polymorphism, Method Overloading, Method Overriding, Nested and Inner classes. Arrays and Strings: Arrays, Creating an array, Types of Arrays, String class Methods, String Buffer methods.

- Theory (Operating Systems) = 40 Marks

 Answer 05 questions out of 08 carrying 02 marks each = 05 x 02 = 10 marks
 Answer 02 questions out of 04 carrying 05 marks each = 02 x 05 = 10 marks
 Answer 02 questions out of 04 carrying 10 marks each = 02 x 10 = 20 marks

- Practical (Software Lab based on Operating Systems) = 20 Marks

 Laboratory Note Book: 05 Marks
 Viva- voce: 05 Marks
 Experiment: 10 Marks.
- A project File (Minimum 10 Programs) is to be submitted.

***Component 4 (C4)**

- Total 40 Marks of SEC paper will be conduct in practical examination.
- This 40 marks will be transformed into 2 Marks & 10 Marks Like :

Answer 05 questions out of 06 carrying 2 marks each = $05 \times 2 = 10$ marks


Answer 03 questions out of 04 carrying 10 marks each = $3 \times 10 = 30$ marks


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