

Asian Educational Institute
(An Autonomous College)
B.Sc (Honours) Physical Sciences
(Session 2025-26) Sem III

BCOMP201: PROGRAMMING WITH-C

Minor theory Maximum Marks: 70

External Examination: 50

Internal Assessment: 20

Credits: 3

Time Allowed: 3 hrs.

Pass Percentage: 35%

Teaching Hours: 55-60Hrs

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Course Outcomes:

- Understand the Programming Process: Define problems, develop algorithms, create flowcharts, write C code, compile, and debug programs effectively.
- Demonstrate Knowledge of C Basics: Explain the history of C, identify its basic structure, and utilize character sets, identifiers, keywords, constants, variables, and data types
- Apply Operators and Expressions: Use arithmetic, unary, logical, relational, assignment, and conditional operators while understanding operator precedence and type conversion.
- Implement Control Statements: Develop programs using branching (if, if-else, switch), looping (for, while, do-while), and jump statements (break, continue, goto).

Instructions for the Paper-Setter

Section A will contain 2 questions, each carrying 7.5 marks, for a total of 15 marks. The questions should be set from Section A of the syllabus. Section B will contain 2 questions, each carrying 7.5 marks, for a total of 15 marks. The questions should be set from Section B of the syllabus. Section C will contain 6 to 12 short answer type questions, covering the entire syllabus uniformly, and will carry a total of 20 marks (i.e., 40% of the total marks).

Instructions for the Candidates

Candidates are required to attempt five questions in all selecting two questions from each sections A and B and compulsory question of section C.

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SECTION – A

Basic structure of C program: History of C, Structure of a C program, Character set, Identifiers and keywords, constants, variables, data types.

Operators and expressions: Arithmetic, Unary, Logical, Relational operators, assignment operators, Conditional operators, Hierarchy of operations type conversion.

Control statements: branching statements (if, if else, switch), loop statements (for, while and do-while), jump statements (break, continue, goto), nested control structures.

Functions: Library functions and user defined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

SECTION – B

Storage Classes: automatic, external, static and register variables.

Arrays: One dimensional and two dimensional arrays, Declaration, initialization, reading values into an array, displaying array contents

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat&strev).

Structures and unions: using structures and unions, comparison of structure with arrays and union.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Text/Reference Books:

- 1 E. Balagurusamy, Programming in C, Tata McGraw-Hill.
- 2 Kernighan and Ritchie, The C Programming Language, PHI.
- 3 Byron Gotfried, Programming in C.
- 4 Kamathane, Programming in C, Oxford University Press.



Asian Educational Institute

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B.Sc. (Houours) Physical Science

BCOMP201L: PRACTICAL BASED ON BCOMP201L(MINOR)

Maximum Marks: 30

Time Allowed: 3 hrs.

Pass Percentage: 35%

Teaching Hours: 55-60Hrs

Credits: 1

L: 0 T: 0 P: 2

Course Outcomes:

- Develop C programs, control program execution flow, implement string handling, manage input/output operations, and apply code reusability techniques.
- Understand fundamental concepts like data types, memory management, and file handling.
- Use control structures like if/else, loops, and switch statements to control the execution of their programs.
- Introduced to basic data structures like stacks, queues, and linked lists, and learn how to implement them in C.

i. Internal Assessment	30% Marks
ii. Viva Voce(External Evaluation)	30% Marks
iii. Project File, Development and Execution(External Evaluation)	30%Marks
iv. Attendance	10% Marks



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Asian Educational Institute
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B.Sc (Honours) Physical Sciences
(Session 2025-26) Sem IV
Subject Code:BCOMP202
Minor theory

BCOM202 : FUNDAMENTALS OF DBMS

Total Marks: 70

External Marks: 50

Internal Assessment: 20

Maximum Time: 3 Hrs.

Minimum Pass Marks: 35%

Lectures to be delivered: 45-55 Hrs.

Credit: (03T+01P)

Instructions for the paper setter

The question paper will consist of three sections A, B and C. Each of sections A and B will have four questions from the respective sections of the syllabus and each question carry 7.5 marks. Section C will consist of one compulsory question having 10 parts of short-answer type covering the entire syllabus uniformly and each question will carry 2 marks.

Instructions for the candidates

Candidates are required to attempt two questions each from section A and B and the entire section C.

SECTION A

Traditional file procession system: Characteristics, limitation. Database : Definition, composition, Database Management System: Definition, Characteristic advantages over traditional file processing system, Implication Database approach, Uses of database, DBA and its responsibilities Database schema, instance. DBMS architecture, data independence, mapping between different levels.

Database language : DDL, DML, DCL.

Database utilities, Data Models, Keys : Super, candidate, primary, unique, foreign.

Entity relationship model : concepts, mapping cardinalities, entity relationship diagram, weak sets, strong entity sets, aggregation, generalization, converting ER diagram to tables.

Relational Algebra : Basic operations, additional operations.

SECTION B

Normalization: Definition, Need, Process: Determinant, Functional Dependency, Full Functional Dependency, Partial Dependency, Transitive dependency, Multivalued Dependency, Join Dependency, Types of Normal Forms, Merits and Demerits of Normalization.

Transaction & Concurrency Control: Concept of transaction, ACID properties, Serializability, States of transaction, Concurrency Control – Locking techniques, time-stamp based protocols.

Database Security: Security requirements, database integrity, Granting & revoking privileges.



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Reference Books:

1. JD Ullman, Garcia Molina, Database System: The Complete Book, Pearson Education.
2. Ramez Elmasri, Fundamentals of Database Systems, Pearson Education.
3. C.J Date, An Introduction to Database System, Pearson Education.
4. Parteek Bhatia, Database Management System.
5. Henry F. Korth, Database System Concepts, Tata McGraw-Hill.



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B.Sc (Honours) Physical Sciences
(Session 2025-26)

Minor Lab

BCOMP202L: FUNDAMENTALS OF DBMS

Max. Marks : 30

Min. Pass Marks: 35%

Time allowed: 3 Hours

The laboratory course will comprise of exercises to supplement what is learnt under Paper BCOMP202 :
FUNDAMENTALS OF DBMS

The break-up of marks for the practical will be as under:

Lab Record	:	05 marks
Viva Voce	:	10 marks
Programe Development and Execution	:	15 marks



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Asian Educational Institute
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Sem III
(Session 2025-26)

BSEC201: PRESENTATION USING POWER POINT

Maximum Marks: 100

External Examination: 70

Internal Assessment: 30

Credits: 3

Time Allowed: 3 hrs.

Pass Percentage: 35%

Teaching Hours: 55-60Hrs
(1T+2L)

Course Outcomes:

- create, format, and present compelling slide presentations AND develop practical skills in using PowerPoint's features to effectively convey information, incorporate multimedia, and engage an audience
- Apply various text formatting options, slide layouts, and design principles to create visually appealing presentations.
- Develop skills in using PowerPoint's various features to create high-quality presentations, including using macros and custom slide shows.

Course Contents:

1) Introduction to Presentation Software: PowerPoint, LibreOffice, Google Slides, Canva,

- Basics of Presentation Interface, Creating and saving a presentation
- Understanding slides, layouts, and templates, Using slide sorter and outline views

2) Designing Effective Slides

- Text formatting and bulleting, Using themes, backgrounds, and color schemes
- Inserting and editing images, shapes, icons, SmartArt and charts for data visualization

3) Enhancing Presentations

- Adding transitions and animations, Embedding audio and video
- Using hyperlinks and action buttons, Slide Master and custom templates

4) Presentation Planning & Structure

- Structuring a presentation: Introduction, Body, Conclusion, Slide content planning: Less text, more visuals
- Principles of effective visual communication, Common design mistakes to avoid

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5) Presentation Delivery Skills

- Public speaking fundamentals, Voice modulation, body language, and eye contact
- Handling audience questions, Practicing with timer and rehearsing slide show

6) Practical Exercises & Final Project

- Create presentations for different purposes:
 - Academic topic
 - Product pitch
 - Event invitation
 - Report summary
- Final Individual Presentation: 5–10 slides on a topic of choice
- Peer Review and Self-evaluation

The breakup of marks for the course:

i.	Internal Assessment	30 Marks
ii.	Viva Voce (External Evaluation)	30 Marks
iii.	Lab Record, Program Development and Execution(External Evaluation)	30 Marks
iv.	Lab Attendance	10 Marks

