

# COMPUTER SCIENCE

# BS PROGRAM

4 YEARS

APPLY NOW

[info@brains.edu.pk](mailto:info@brains.edu.pk)  
[www.brains.edu.pk](http://www.brains.edu.pk)

091 5611637, 0336 5700036,  
0325 5700036, 0331 9191283  
PHASE- III CHOWK, JAMRUD ROAD, PESHAWAR



# BS COMPUTER SCIENCE

## 4 YEARS

### COMPUTER SCIENCE

## CORE OBJECTIVE

- o To provide students with a comprehensive understanding of computer science principles, theories, and practices.
- o To foster critical thinking, problem-solving, and analytical skills among students.
- o To cultivate an awareness of ethical and professional responsibilities in the realm of computer science.
- o To equip students with the ability to apply their computer science knowledge to real-world problems and devise innovative solutions.
- o To promote effective communication and teamwork skills in students.
- o To encourage research endeavors and support the pursuit of higher studies in the field of computer science.



Recognized by:

**Higher Education Commission of Pakistan**

The **BRAINS** Institute Peshawar as a degree awarding institute recognized by HEC .

Chartered by:

Govt: of Khyber Pakhtunkhwa

## ELIGIBILITY CRITERIA

- Completed Intermediate/12 years of schooling/A-Level or equivalent, with Mathematics as a subject.
- Achieved a minimum score of 50% in the aforementioned qualifications.

An equivalency certificate from IBCC, if the education was completed in a foreign country or under a different system.

- Applicants must have completed Intermediate/12 years of schooling/ A-Level or equivalent, with Mathematics as a subject.
- Students who have not studied Mathematics at the intermediate level are required to pass deficiency courses in Mathematics (06 credits) within the first two semesters.

## FEE

ADP Program	Eligibility	Credit Hours	Admission fee	Semester Fee	Total Fee
Computer Science	FA/FSc or Equivalent with 50% Marks	133	10000	60000	70000

## ADMISSIONS ARE OFFERED TWICE A YEAR

- Spring Admission : From February to March
- Fall Admission : From July to August

## LAPTOP SCHEME

BRAINS is set to offer prospective students the opportunity to acquire laptops through an easy installment plan, facilitated by bank financing.

## SCHOLARSHIP OFFERED BY

- Worker welfare Board
- KP Education foundation
- BRAINS'S Merit and Need Based Scholarship

## EXAMS & ASSESSMENT

The evaluation of students' study progress is done continuously throughout the semester. This assessment includes assignments, online quizzes, mid-term exam, and final-term exam.

## AWARD OF DEGREE

- A minimum of 130 credit hours is required to be awarded a BS degree in any computing discipline mentioned in this document.
- The minimum duration for completion of BS Computing degrees is four years, but the HEC allows a maximum period of seven years to complete the degree requirements.
- A minimum 2.5 CGPA (Cumulative Grade Point Average) on a scale of 4.0 is required to be awarded a BS Computing Degree.

## SOFTWARE DEVELOPMENT

BRAINS software Enterprise, set up in 1995, has a long history of making software. It's made software for all the school boards (BISE) in Khyber Pakhtunkhwa (KP), and these programs are still working well today. Over time, it's made a lot of different software development. For students, this is a great place to work and learn from experienced developers and engineers.

## ACADEMIC & PRACTICAL LEARNING

At IBRAINS, the Computer Science Department is spearheaded by a Head of Department (HOD) or Chairman, and bolstered by Professors, Associate Professors, Assistant Professors, and Lecturers. These pivotal figures form the bedrock of the department, playing a vital role in curriculum delivery.

The department enhances practical learning through partnerships with software houses and development projects, providing students with opportunities for hands-on practice, client interaction, and real-world project execution.

Our students are groomed for industry placements and encouraged to engage in entrepreneurship programs, equipping them not only for job readiness but also for launching their own ventures.

## COURSE CONTENTS DETAIL

The program is divided into 8 semesters, with a total of 130-136 credit hours.

Here's a general breakdown of the curriculum:

## COURSES CONTENTS

1. Introduction to Computing
2. Programming Fundamentals
3. Object-Oriented Programming
4. Data Structures
5. Database Systems
6. Operating Systems
7. Computer Networks
8. Software Engineering
9. Theory of Automata
10. Computer Architecture
11. Web Engineering
12. Artificial Intelligence

## ELECTIVE COURSES

13. Data Mining
14. Machine Learning
15. Cybersecurity
16. Cloud Computing
17. Game Development
18. Mobile Application Development

## JOBS AND CAREER FOR COMPUTER SCIENCE

The Bachelor of Science (BS) program in Computer Science and Software Engineering at BRAINS equips students with the skills and knowledge necessary for a diverse array of careers in the computer science realm. This includes roles in Software Development, Data Science, Cybersecurity, Network Administration, Database Administration, as well as opportunities in Research, Teaching, and Entrepreneurship

## ALUMNI

Many of the alumni from the Computer Science program have chosen to pursue further studies and have completed their MS and PhDs from top universities abroad. This indicates the program's success in fostering a passion for learning and scientific discovery.

## FIRST YEAR (SEMESTERS 1 AND 2)

- Introduction to Computing
- Programming Fundamentals
- Object-Oriented Programming
- Discrete Mathematics
- Calculus and Analytical Geometry
- English Composition and Comprehension
- Pakistan Studies
- Islamic Studies / Ethics

## SECOND YEAR (SEMESTERS 3 AND 4)

- Data Structures
- Database Systems
- Operating Systems
- Computer Architecture
- Linear Algebra
- Differential Equations
- Technical and Business Writing
- Statistics and Probability

## THIRD YEAR (SEMESTERS 5 AND 6)

- Design and Analysis of Algorithms
- Software Engineering
- Computer Networks
- Theory of Automata
- Web Engineering
- Artificial Intelligence
- Elective courses

## FOURTH YEAR (SEMESTERS 7 AND 8)

- Human-Computer Interaction
- Professional Practices
- Final Year Project (across two semesters)
- Elective courses

## ELECTIVE COURSES CAN BE CHOSEN FROM A WIDE RANGE OF SUBJECTS, INCLUDING BUT NOT LIMITED TO:

- Data Mining
- Machine Learning
- Cybersecurity
- Cloud Computing
- Game Development
- Mobile Application Development

## DISCLAIMER

Course revisions may occur periodically as part of ongoing reviews to align them with topclass courses offered by foreign universities. During these reviews, the needs of the local industry and job market are also taken into account. Additionally, The BRAINS Institute reserves the right to modify the fee structure as needed