



SZABIST
UNIVERSITY

COMPUTER SCIENCE



BS COMPUTER SCIENCE
BS SOFTWARE ENGINEERING
BS MULTIMEDIA AND GAMING
MS CYBER SECURITY
MS COMPUTER SCIENCE
PHD COMPUTING

BS Computer Science

BS (Computer Science)

SZABIST offers a four-year (eight semesters) BS Computer Science degree program which is accredited by National Computing Education & Accreditation Council, (NCEAC). The program covers a wide range of courses in core Computer Science, Information Technology and Software Engineering. The program is essentially a day program and consists of 41 courses (five-six courses per semester) with a total of 130 credit hours. The complete course plan includes 5 technical electives and 4 university electives. These 5 technical electives provide intensive learning in the diversified areas of Computer Science and allied disciplines. Internship opportunities are provided to complete degree requirement. The maximum time limit to complete the degree program is six years.

Admission Requirements

The candidate must have completed O-Levels (minimum 8 subjects including 5 compulsory subjects; English, Urdu, Maths, Islamiyat & Pakistan Studies) and A-levels (minimum 3 Subjects)/12th Grade/Intermediate with minimum 50% marks or equivalent from a recognized institution. Mathematical background will be preferred for BS Computer Science program. Inter Board Committee of Chairmen (IBCC) equivalency is required for O & A Levels/IB Diploma/High School Diploma or equivalent. General Paper (A Levels) will not be counted.

Fee Structure*

Application Processing Fee	: Rs. 2,000
Admission Fee	: Rs. 25,000
Security Deposit (refundable)	: Rs. 15,000
Student Activity Charges	: Rs. 1,500
Tuition Fee (Per semester 18 Cr Hrs)	: Rs. 145,800
Lab Charges per semester	: Rs. 3,000/-
Course Registration Fee Per Course	: Rs. 500/-
Examination Fee Per Course	: Rs. 500/-

*SZABIST reserves the rights to revise the fees/withdraw of scholarship without any prior notice.



BS (Computer Science)

First Year

Fall Semester

Calculus and Analytical Geometry
English Composition and Comprehension
Fundamentals of Programming
Lab: Fundamentals of Programming
Applied Physics
Lab: Applied Physics
Introduction to Computer Science
Lab: Introduction to Computer Science
Pakistan Studies

Spring Semester

Object Oriented Programming Techniques
Lab: Object Oriented Programming Techniques
Communication and Presentation Skills
Digital Logic Design
Lab: Digital Logic Design
Probability and Statistics
Islamic Studies/Humanities

Second Year

Fall Semester

Discrete Mathematical Structures
Data Structures and Algorithms
Lab: Data Structures and Algorithms
Computer Organization and Assembly Language
Lab: Computer Organization and Assembly Language
University Elective-I
CS Supporting-I

Spring Semester

Database Systems
Lab: Database Systems
Finite Automata Theory and Formal Languages
Linear Algebra
Design and Analysis of Algorithms
University Elective-II

Third Year

Fall Semester

Operating Systems
Software Engineering
Compiler Construction
CS Supporting-II
CS Supporting-III

Spring Semester

Technical and Business Writing
Computer Networks and Data Communications
Lab: Computer Networks and Data Communications
Artificial Intelligence
Lab: Artificial Intelligence
CS Elective-I
CS Elective-II

Fourth Year

Fall Semester

Final Year Project-I
Parallel and Distributed Computing
Professional Practices
University Elective-III
CS Elective-III

Spring Semester

Information Security
Final Year Project-II
University Elective-IV
CS Elective-IV
CS Elective-V

Mathematics deficiency course will be offered to those students who have limited mathematical background. (if deemed necessary by PM/HoD)

BS Multimedia and Gaming

BS Multimedia and Gaming

The BS Multimedia & Gaming program at SZABIST is a full-time four-year degree program comprising eight semesters with minimum of 130 credit hours. The degree program is designed around a set of courses pertaining to the fundamentals of game design, techniques for digital animation and visual effects, creation and application of VR and AR in gaming and multimedia, programming languages and tools essential for game and multimedia development, auditory aspect of games and multimedia that are necessary to produce high-quality education in multimedia and gaming, equipping students with a diverse set of skills and knowledge to thrive in various roles within the industry. Some additional courses from the disciplines of Computer Science, Mathematics, Management Science, and Humanities are part of the degree program to develop a broader knowledge base of the students. The BS Multimedia & Gaming program is offered through a trained foreign qualified faculty. It consists of 44 courses with a total of 130 credits hours. The maximum duration to complete the degree is six years.

Admission Requirements

The candidate must have completed O-Levels (minimum 8 subjects including 5 compulsory subjects; English, Urdu, Maths, Islamiyat & Pakistan Studies) and A-levels (minimum 3 Subjects)/12th Grade/Intermediate with minimum 50% marks or equivalent from a recognized institution. Mathematical background will be preferred for BS Multimedia and Gaming program. Inter Board Committee of Chairmen (IBCC) equivalency is required for O & A Levels/IB Diploma/High School Diploma or equivalent. General Paper (A Levels) will not be counted.

Fee Structure*

Application Processing Fee	: Rs. 2,000
Admission Fee	: Rs. 25,000
Security Deposit (refundable)	: Rs. 15,000
Student Activity Charges	: Rs. 1,500
Tuition Fee (Per semester 18 Cr Hrs) with 10% subsidy	: Rs. 131,220
Lab Charges per semester	: Rs. 3,000/-
Course Registration Fee Per Course	: Rs. 500/-
Examination Fee Per Course	: Rs. 500/-

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First Year (Fall Semester)

- Calculus and Analytical Geometry
- English Composition and Comprehension (Functional English)
- Fundamentals of Programming
- Lab: Fundamentals of Programming
- Introduction to Computer Science
- Lab: Introduction to Computer Science
- Discrete Mathematical Structures

Spring Semester

- Object Oriented Programming Techniques
- Lab: Object Oriented Programming Techniques
- CS Supporting-1 MVC
- Digital Logic Design
- Lab: Digital Logic Design
- Database Systems
- Lab: Database Systems
- Linear Algebra

Second Year (Fall Semester)

- Data Structures and Algorithms
- Lab: Data Structures and Algorithms
- Software Engineering
- Probability and Statistics

- Computer Networks and Data Communications
- Lab: Computer Networks and Data Communications
- Artificial Intelligence
- Lab: Artificial Intelligence
- Information Security
- Lab: Information Security

Spring Semester

- Computer Organization and Assembly Language
- Lab: Computer Organization and Assembly Language
- Applied Physics
- Lab: Applied Physics
- Islamic Studies/ Humanities
- Communication and Presentation Skills (Expository Writing)
- Mobile Multimedia
- Lab: Mobile Multimedia
- Game Design and Development
- Lab: Game Design and Development

Third Year (Fall Semester)

- Operating Systems
- Lab: Operating Systems

- Interactive Games and Audio
- Lab: Interactive Games and Audio
- Game Programming
- Lab: Game Programming
- Social Sciences (Example: Introduction to Management)
- MG Elective-1 Art for Game
- Lab: MG Elective-1 Art for Game
- MG Elective-2 Programming for 3D & Web 3D Apps
- Lab: MG Elective-2 Programming for 3D & Web 3D Apps

Spring Semester

- Video Production Techniques
- Lab: Video Production Techniques
- Parallel and Distributed Computing
- Lab: Parallel and Distributed Computing
- MG Elective-3 Web Applications and Services
- Lab: MG Elective-3 Web Applications and Services
- MG Elective-4 Video Games & Creative Writing
- Lab: MG Elective-4 Video Games & Creative Writing

- MG Elective-5 HCI & Computer Graphics
- Lab: MG Elective-5 HCI & Computer Graphics
- MG Elective-6 Game Project Management
- Lab: MG Elective-6 Game Project Management

Forth Year (Fall Semester)

- Final Year Project-I
- Design and Analysis of Algorithms
- MG Elective-7 Mobile Games & Entertainment
- Lab: MG Elective-7 Mobile Games & Entertainment
- Elective Supporting Course 1
- Technical and Business Writing
- Entrepreneurship

Spring Semester

- Final Year Project-II
- Ideology and Constitution of Pakistan (Pakistan Studies)
- Professional Practices
- Civics and Community Engagement



BS Software Engineering

BS (Software Engineering)

The BS Software Engineering program at SZABIST is a full-time four-year degree program comprising eight semesters with minimum of 130 credit hours. The degree program is designed around a set of courses pertaining to the principles of software analysis, design, architecture, development, testing, and maintenance techniques that are necessary to produce high-quality software systems. Some additional courses from the disciplines of Computer Science, Mathematics, Management Science, and Humanities are part of the degree program to develop a broader knowledge base of the students. The BS Software Engineering program is offered through a trained foreign qualified faculty. It consists of 42 courses with a total of 130 credits hours. The maximum duration to complete the degree is six years.

Admission Requirements

The candidate must have completed O-Levels (minimum 8 subjects including 5 compulsory subjects; English, Urdu, Maths, Islamiyat & Pakistan Studies) and A-levels (minimum 3 Subjects)/12th Grade/Intermediate with minimum 50% marks or equivalent from a recognized institution. Mathematical background will be preferred for BS Software Engineering program. Inter Board Committee of Chairmen (IBCC) equivalency is required for O & A Levels/IB Diploma/High School Diploma or equivalent. General Paper (A Levels) will not be counted.

Fee Structure*

Application Processing Fee	: Rs. 2,000
Admission Fee	: Rs. 25,000
Security Deposit (refundable)	: Rs. 15,000
Student Activity Charges	: Rs. 1,500
Tuition Fee (Per semester 18 Cr Hrs)	: Rs. 145,800
Lab Charges per semester	: Rs. 3,000/-
Course Registration Fee Per Course	: Rs. 500/-
Examination Fee Per Course	: Rs. 500/-

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BS (Software Engineering)

First Year

Fall Semester

Introduction to Computer Science
Lab: Introduction to Computer Science
Fundamentals of Programming
Lab: Fundamentals of Programming
Applied Physics
Lab: Applied Physics
Pakistan Studies
Calculus and Analytical Geometry
English Composition and Comprehension

Spring Semester

Object-Oriented Programming Techniques
Lab: Object-Oriented Programming
Software Engineering
Discrete Mathematical Structures
University Elective-I
Communication and Presentation Skills
Islamic Studies/Humanities

Second Year

Fall Semester

Data Structures and Algorithms
Lab: Data Structures and Algorithms
Software Requirement Engineering
Human Computer Interaction
Linear Algebra
University Elective-II

Spring Semester

Operating Systems
Lab: Operating Systems
Database Systems
Lab: Database Systems
Software Design & Architecture
Lab: Software Design & Architecture
Probability and Statistics
University Elective-III

Third Year

Fall Semester

Software Construction and Development
Lab: Software Construction and Development
Computer Networks and Data Communication
Lab: Computer Networks and Data Communication
Technical and Business Writing
SE Supporting-I
SE Supporting-II

Spring Semester

Software Quality Engineering
Information Security
Professional Practices
Web Engineering
SE Elective-I
SE Supporting-III

Fourth Year

Fall Semester

Software Project Management
Software Re-Engineering
SE Elective-II
SE Elective-III
Final Year Project-I

Spring Semester

Final Year Project-II
University Elective-IV
SE Elective-IV
SE Elective-V

Mathematics deficiency course will be offered to those students who have limited mathematical background. (if deemed necessary by PM/HoD)

MS Cyber Security

Master of Science in Cyber Security (MS Cyber Security)

SZABIST offers a 2-year duration MS (Cyber Security) degree in the evening. It requires 30 credit hours including 3 core courses, 2 specialized data science courses and a Thesis of 6 credit hours is mandatory. The maximum time limit to complete the MS (Cyber Security) degree is 4 years.

The MS (Cyber Security) program has been designed to give students the option to be part of a innovative IT solutions such as mobile technology, online banking and electronic government services into everyday use. However, with so many e-solutions and such extensive use of the Internet, attention needs to be turned to the security issue. Cyber systems require innovative and secure IT solutions for everyday use. The goal of the program is to enable students to apply scientific and technological development in building a secure information society. The aim is to make technology-driven solutions to secure cyberspace. Moreover, to allow students to have hands-on digital forensics experience, this deals with the investigation and recovery of information found in digital devices to identify computer-based crime. The area is becoming critical for both data security and law enforcement. MS in Cyber Security offers strong expertise for a career in securing and managing the cyber society.

Admission Requirements

For admission to MS (Cyber Security) program, the candidates must possess 16 years of relevant education with minimum 50% marks/2.0 CGPA from a university recognized by HEC. GAT (General) or HAT relevant is mandatory for MS students with minimum 50% score. Last Degree verification from Higher Education Commission (HEC) is required.

Fee Structure*

Processing Fee	:	Rs. 2,000
Admission Fee	:	Rs. 25,000
Security Deposit (refundable)	:	Rs. 15,000
Student Activity Charges	:	Rs. 1,500
Tuition Fee (per semester 3 courses)	:	Rs. 66,600
Course Registration Fee Per Course	:	Rs. 500/-
Examination Fee Per Course	:	Rs. 500/-

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Master of Science in Cyber Security

Core Courses

Network Security
Information Security
Digital Forensics
Applied Cryptograph

Deficiency Courses

Programming Fundamentals (Core Programming Course)
Data Structures & Algorithms or
Design & Analysis of Algorithms
Computer Networks

Elective courses

Network Penetration Testing and Countermeasures
Security in Mobile and Wireless Networks
Ethical Hacking
Malware Detection and Analysis
Blockchain and Crypto Assets
Intrusion Detection and Firewalls
Reverse Engineering and Malware Analysis
Security and Privacy for the Smart Grid
Machine Learning for Cyber Security
Security Modelling and Analysis of Mobile Agent Systems
Security in Ad Hoc Sensor Networks
Security in Cloud Environment
Advanced Topic in Cyber Security - I
Advanced Topic in Cyber Security - II



MS Computer Science

MS (Computer Science)

SZABIST offers MS (CS) degree in three domains: Core Computer Science area and in two specialization tracks, i.e., Software Engineering (SE) and Networks and Security (N&S). Students are required to complete 3 focused courses in any specific domain.

The program is of 2-year duration and is offered in the evening. It requires 33 credit hours to complete. Student has the option to complete MS through course work only or with research. If student opts for course work only, he/she is required to complete 11 courses of 3 credit hours each. Else, the student is required to complete 9 Courses (27 credit hours) and Two Independent Research Study (6 credit hours) OR One Thesis (6 credit hours). The maximum time limit to complete the MS degree is four years.

Admission Requirements

For admission to MSCS program the candidates must possess 16 years of relevant education with minimum 50% marks/2.0 CGPA from a university recognized by HEC. GAT (General) or HAT relevant is mandatory for MS student with minimum 50% score. Last Degree verification from Higher Education Commission (HEC) is required.

Fee Structure* MS (Computer Science)

Processing Fee	:	Rs. 2,000
Admission Fee	:	Rs. 25,000
Security Deposit (refundable)	:	Rs. 15,000
Student Activity Charges	:	Rs. 1,500
Tuition Fee (per semester 3 courses)	:	Rs. 66,600
Course Registration Fee Per Course	:	Rs. 500/-
Examination Fee Per Course	:	Rs. 500/-

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MS (Computer Sciences)

Core Courses

Research Methodology
Advanced Algorithms Analysis
Theory of Computation
Advanced Operating Systems
Advanced Computer Architecture

Courses for Specialization:

Computer Science (CS)
Real-Time Systems
Digital Image Processing
Machine Learning
Data Mining
Operation Research
Expert Systems
Reverse Engineering
Digital Forensics and Malware Analysis
Advanced Resource Sharing Architecture
Computer Vision
Robotics
Advanced Database Design
Distributed Computing
Systems and Network Programming
Deep Learning
Big Data Analytics
Natural Language Processing

Software Engineering (SE)

Software Requirement Engineering
Software System Architecture
Software System Quality
Advanced Software Engineering
Software Analysis and Testing
Web Engineering
Software Project Management

Networks & Security (N&S)

Advanced Computer Networks
Network Security
Applied Cryptography
Information Security
Wireless Sensor Networks
Telecom Policies and Regulations
Mobile Ad-hoc Networks
Advanced Data Communications
Cyber Security
Advanced Ethical Hacking
Advanced Routing and Switching



PhD Computing

PhD (Computing)

SZABIST offers a PhD Degree in Computing that can be completed during the evenings in three years after the MS degree. 6 PhD courses and dissertation are required to graduate. A total of 48 credit hours must be completed.

Specializations of Study

Specialized areas include Database Engineering, Data Warehousing & Mining, Networking & Communication, Business Intelligence, Process Modeling, Telecommunication, Mobile Communication, Mobile Computing, Artificial Intelligence, Software Engineering, Agent Systems, Multimedia & HCI Systems, Speech Recognition, e-Business and Technology Management, Intelligent Systems, Mechatronics, Machine Vision Image Processing, MIS and any other area which falls within the purview of Computer Science/Computing.

Research

SZABIST strongly encourages the publication of research findings of Independent Studies, Thesis and Dissertation in research journals and conferences. SZABIST also publishes its own research journals.

Admission Requirements

For admission in the PhD program, the candidate must have a 17.5 years of education in a relevant field with minimum 60% marks/ CGPA 3.00 from an HEC recognized institution. GRE/GAT (subject) with minimum 60% score is required in relevant discipline. Last Degree verification from Higher Education Commission (HEC) is required.

Fee Structure* PhD (Computing)

Application Processing Fee	:	Rs. 2,000/-
Admission Fee	:	Rs. 25,000/-
Security Deposit (refundable)	:	Rs. 15,000/-
Student Activity Charges	:	Rs. 1,500/-
Tuition Fee (Per Semester 3 course)	:	Rs. 90,000/-
PhD Dissertation (per 3 Cr Hrs)	:	Rs. 50,100/-
Course Registration Fee Per Course	:	Rs. 500/-
Examination Fee Per Course	:	Rs. 500/-

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PhD (Computing)

Courses

Research Methodology
Independent Research Study.
Electives-I, II, III, IV
Dissertation
List of Electives can be seen from Prospectus



Admission Schedule

Admissions Start	:	Jan 22, 2024
Last date to Apply	:	March 05, 2024
Admission Test	:	March 09-10, 2024
Interviews	:	March 15 to 17, 2024
Classes Commence	:	September, 2024

APPLY ONLINE:

Log on to: <http://admissions.szabist.edu.pk>

For further information please contact:
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Discover Yourself