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# PROSPECTUS 2022

# HYDERABAD CAMPUS

Shaheed Zulfikar Ali Bhutto Institute of Science & Technology Karachi - Islamabad - Larkana - Hyderabad - Gharo - Dubai

# We just Don't Work Hard We Work Smart

# SHAHEED ZULFIKAR ALI BHUTTO INSTITUTE OF SCIENCE & TECHNOLOGY

# THE VISION

SZABIST aims to be a globally recognized institute for excellence in education, research, development, and distinction in service.

# THE MISSION

SZABIST is committed to produce highly qualified professionals to:

- · Meet national and global contemporary needs;
- Conduct cutting edge research and development;
- · Provide hi-tech scientific and technological expertise;
- Meet current and future socio-economic challenges;
- · Meet global citizenship responsibility.

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Fall 2022 Spring 2023

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# SHAHEED ZULFIKAR ALI BHUTTO



# January 5, 1928 - April 4, 1979 Former Prime Minister of Pakistan

"We will give science and technology requirements the highest priority and our attention. To implement any program of scientific and technological development, the country needs to train scientific manpower. In this, the schools, colleges and universities have to play their role. I desire that vast number of people of Pakistan should acquire technological skills. I want first-class science in Pakistan because nothing less is acceptable. And I wish Pakistan to be increasingly self-reliant in all aspects of technology."

Address at the Inauguration Ceremony of Karachi Nuclear Power Plant, Karachi, Pakistan, November 28, 1972.

# SHAHEED MOHTARMA BENAZIR BHUTTO



# June 21, 1953 - December 27, 2007 Former Prime Minister of Pakistan, Founding Chancellor SZABIST

"Technology and Communication have changed our world and are influencing a global culture. The ability to google information from anywhere in the world puts technology into the hands of even the most isolated rural communities in the developing world. The more people learn, the more they want to learn. The more they interact, the less likely they will be to fear the unknown. Just as democracy and educational exchange promote peace, the free flow of modern technology and communication promote peace."

Reconciliation: Islam, Democracy and the West, 2008.

# **CHANCELLOR'S MESSAGE**



I welcome you to join the Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST), one of the most prestigious higher education institutions of Pakistan.

At SZABIST, we believe that innovative thoughts and high ideals teach the values of hard work, creativity and continuous learning. We prepare our students for professional careers, therefore, we offer a wide variety of programs including Management, Computer, Social and Media Sciences, Mechatronic Engineering, Biosciences, Education, Public Health and Law. The curriculum of each traditional and emerging program is approved by the Higher Education Commission (HEC), Pakistan and is taught by highly qualified and competent faculty members.

To achieve the mission of our founding Chancellor Shaheed Mohtarma Benazir Bhutto of providing opportunity for high quality tertiary education and research to the youth of Pakistan, SZABIST has a presence in Karachi, Islamabad, Larkana, Hyderabad, and an overseas campus in Dubai, UAE. We are also developing our campus at Gharo, which will inshAllah, open in Fall 2022.

At SZABIST, you will become part of a community that believes research is an integral part of academic excellence. We encourage participation in research and extra-curricular activities enabling our students to realize and nurture their true intellectual and professional potential.

SZABIST also offers numerous scholarships and financial assistance to make education accessible and affordable for all of its students. In order to augment students' learning experience and continuously improve the standard of education, the Institutional Research Department/Quality Enhancement Cell periodically assesses all programs to enhance the quality of education being imparted.

SZABIST is investing considerable resources for renovation and upgradation of its infrastructure and acquisition of additional physical facilities for its campuses. A "Library Hub" is also being established to fulfill emerging research and academic requirements.

As I welcome the new students, I encourage them to strive for excellence and while they equip themselves with marketable skills, they should actively work to promote the values of a tolerant, inclusive and pluralistic society.

The motto of SZABIST is to provide students the opportunity to experience university life in a way that helps them to discover themselves whilst focusing on their professional goals. So I wish you success in your years at SZABIST.

**Dr. Azra Fazal Pechuho** Chancellor SZABIST

# **PRESIDENT'S MESSAGE**



It is my pleasure to welcome prospective students to Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST), a tertiary education institute known for its high quality and broad range of undergraduate and postgraduate programs and premium learning environment. SZABIST believes in encouraging students to discover their talent and strengths and achieve their educational, professional, and personal aspirations.

Over the past 25 years, SZABIST's national and international market reputation has been significantly enhanced. This is evident from the increased enrollment of about 11,000 students in its five Campuses-Karachi, Larkana, Hyderabad, Islamabad and Dubai (UAE).

SZABIST, guided by the vision of its Founding Chancellor, Shaheed Mohtarma Benazir Bhutto, is today a leading higher education institution for the youth of Pakistan aspiring for a high quality, relevant education. Our diversified academic portfolio offers a range of courses in 15 Bachelors, 16 Masters and 5 Doctoral level programs in the field of Management, Computing, Social Sciences, Media, Engineering, Biosciences, Public Health, Education and Law. This prospectus provides you with comprehensive information about our programs. The Institute, in compliance with the requirements of Higher Education Commission and Accreditation Councils, has developed curricula which not only relates to prevailing market demand but also prepares students with the knowledge and skills for the future needs of Pakistan's growing economy.

We are proud of our competent faculty and professionals who teach according to rigorous academic standards, evolving market requirements and provide a supportive environment for personal development. In addition to a wide spectrum of disciplines as presented in this Prospectus, SZABIST also offers exciting opportunities for co-curricular activities. Our Student Societies organize debates, drama, sports competitions, guest speaker sessions, workshops, and build networks with the Alumni and renowned companies for assistance in job placements.

Moreover, SZABIST was awarded 94% for its Quality Enhancement processes. Quality assurance measures are rigorously applied through tools such as Program Self-Assessment Reports, feedback of relevant stakeholders, publications and fulfilling documentation requirements of the regulatory authorities.

We hope you will become part of the SZABIST community of students and graduates and ultimately the global network of SZABIST alumni.

**Shahnaz Wazir Ali** President SZABIST

# VICE PRESIDENT'S (ACADEMICS) MESSAGE



A great leader Mr. Nelson Mandela said: "Education is the most powerful weapon which you can use to change the world."

SZABIST has seen exponential growth in its programs, students, and physical infrastructure since its inception in 1995. This could be possible with the full support of its Management, especially of its worthy Chancellor, Dr. Azra Fazal Pechuho.

The whole purpose of education is to create "Analytical Minds". As a responsible institution, we just don't believe in classroom studies but believe in complete personality development. We, therefore, regularly conduct co-curricular and extracurricular activities through our various students' societies. We aim to prepare our students to be useful to society.

During the unfortunate COVID era, SZABIST has remained the most successful institution in the City, transforming from a physical to a virtual and hybrid system quickly to save the precious time of its students. We conducted virtual seminars and guest speeches to engage our students besides taking their regular classes to ensure our commitment to the students.

SZABIST now has six campuses in Karachi, Islamabad, Larkana, Hyderabad, Gharo, and Dubai. SZABIST is the only Pakistani institution having its campus in Dubai International Academic City since 2003, competing with the world's leading institutions. Karachi campus is the mother campus having more than 8000 students enrolled in its 40-plus academic programs in Management Sciences, Computer Science, Social Sciences, Media Science, Life Sciences, Education, Mechatronic Engineering, and Law. Our three-year LLB program is offered in collaboration with the University of London.

SZABIST programs comply with HEC recommended course plans and are accredited by regulatory bodies such as NBEAC, NCEAC, PEC, NACTE, and CIEC. The learning outcomes of the programs ensure to create critical & creative thinking, acquire problem-solving skills, and professionally handle all pedagogical tools. We are fully aware that a University without Research is like a "Body" without a "Soul"; therefore, we emphasize research activities at levels in our programs.

Finally, I thank all the newcomers for choosing SZABIST for their academic pursuits and wish them a happy stay during the entire period of their course of studies. I expect, as SZABISTian, you will show a high level of maturity through your conduct and actions.

**Prof. Dr. M. Altaf Mukati** Vice President (Academics) SZABIST

# VICE PRESIDENT DEVELOPMENT AND FINANCE MESSAGE



Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology initiated by Shaheed Mohtarma Benazir Bhutto and currently functioning under the able leadership of its Chancellor Dr. Azra Fazal Pechuho has emerged as a leading higher education institute that plays a vital role in producing highly qualified graduates.

Here we provide the environment, facilities, academic and professional experiences, and opportunities for research that aim at a creative, ethical, smart and holistic personality. With the commencement of the new academic year, students are encouraged to utilize the wide range of services and facilities, the events, programs, seminars, and festivals that will make their life at SZABIST interesting.

Get involved, make the most of your time and gain the experience that will make you the smart individual in demand at national and multinational firms within the country and abroad.

We are here to support you and welcome you to a fulfilling and interesting period at SZABIST.

Nasreen Haque Vice President (Development and Finance) SZABIST

# VICE PRESIDENT'S (ADMINISTRATION) MESSAGE



I am delighted to welcome you to Shaheed Zulfikar Ali Bhutto Institute of Science and Technology. At SZABIST, you will become part of a strong and supportive community that values academic excellence and diversity.

The unfailing dedication and vision of Shaheed Mohtarma Benazir Bhutto has led SZABIST to grow into an exceptionally well established and well reputed institution. Today SZABIST has developed into a strong multidisciplinary institution with campuses in Karachi, Hyderabad, Larkana, Islamabad and Dubai.

Over the years, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST)

has excelled in the field of education and has produced some of the most well qualified and outstanding graduates.

We at SZABIST are dedicated not just to the purpose of education and learning, but also to assisting and guiding students to adjust to university life and to discover their skills and talents. We encourage students to promote a campus environment that is respectful, supportive and safe.

SZABIST is truly proud of the role students play in the life of the institution and it is hoped that you will also play an important part.

It is hoped that the Prospectus 2022 will serve as a useful guide in planning out your academic journey and that each of you have a well learning and fruitful experience here at SZABIST.

With best wishes

Imtiaz Kazi Vice President Administration SZABIST

# INTRODUCTION

Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST) is a chartered institute of Pakistan established through a Legislative Act of Sindh Assembly (Sindh Act No. XI of 1995). It is highly ranked, approved and recognized by the Higher Education Commission (HEC) Pakistan as a degree awarding institution. All the programs offered at SZABIST are consistent with the guidelines laid by HEC and other regulatory bodies.

SZABIST comprises five campuses located in Karachi, Hyderabad, Larkana, Islamabad and Dubai with a current student population of over 18,000, collectively. Altogether over 24,000 talented graduates have been proudly awarded degrees by all campuses of SZABIST. Our alumni are sought by national and multinational organizations and hold key positions in several reputable firms.

SZABIST offers undergraduate, graduate and post graduate degrees in 5 different disciplines: Faculty of Management Sciences, Faculty of Computing and Engineering Sciences, Media Sciences, Faculty of Education and Social Sciences, and Faculty of Life Sciences. In addition, SZABIST offers LLB program, CertHE (Law), and BABS program as external programs in affiliation with University of London and Coventry University, UK, respectively.

SZABIST is ranked as one of the most reputed universities by Higher Education Commission (HEC), Pakistan and Chartered Inspection and Evaluation Committee (CIEC) Sindh, Pakistan. All programs of SZABIST are conducted under strict compliance of the relevant regulatory bodies such as NBEAC, NCEAC, NACTE, PEC and KHDA Dubai (UAE). Since 2012, the SZABIST-IR/QEC has been ranked in the highest "W" Category in the yearly quantitative report by the Quality Assurance Agency (QAA) of HEC, Pakistan.

The Institute has signed MoUs with various reputable and distinguished organizations and institutions such as Istanbul Medipol University, Turkey; University of London, UK; ICRC, Aman Foundation and JS Bank.

SZABIST Hyderabad Campus is situated at Thandi Sarak - the jugular vein of Hyderabad, in State Life building. Plans are underway for the construction of a purpose built campus to cater the growing educational needs of Hyderabad.

SZABIST is proud to offer education par excellence in the areas that are crucial for Pakistan's socio-economic development.

# INTRODUCTION

















# **PROGRAMS & CURRICULA**

## DEGREES OFFERED

All five campuses of SZABIST offer various degree programs in different disciplines so please refer to page 40 for details.

# **Bachelor of Business Administration (BBA)**

SZABIST offers a four-year (eight semesters) BBA degree program of 144 credit hours. This is SZABIST's flagship program. For the BBA program, students are required to complete 46 courses and 03 credit hours Business Project & a 03 credit hours Community Service Project. The program includes 42 compulsory courses and 4 elective courses from Management, Marketing or Finance. To obtain the BBA degree, students have to complete 144 credit hours and six-week internship. Maximum time limit to complete the BBA degree is six years. BBA program is an ACCA accredited program; those who complete BBA from SZABIST, Hyderabad, will get an exemption in 06 out of 09 ACCA Foundation papers (F1, F2, F3, F5, F7 and F9).

# Bachelor of Science in Accounting & Finance (BS A&F)

SZABIST offers a four-year (eight semesters) Bachelor of Science (Accounting & Finance) program, consisting of 46 Courses (six courses per semester) and a 6 credit hours Research Project. (to be offered over last two semester). Students have to complete 144 credit hours along with six weeks of internship to obtain the BS Accounting & Finance (BS A & F) degree. The maximum time limit to complete the degree program is six years.

Graduates of BS (A & F) program will get exemptions in nine papers of both Institute of Chartered Accountants of Pakistan (ICAP) and Association of Chartered Certified Accountants (ACCA), UK.

# **Bachelor of Science in Computer Science (BS CS)**

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 full time day program and consists of 41 courses (five courses per semester) with a total of 130 credit hours. The complete course plan includes 8 technical electives and 4 university electives. These 8 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.

## Bachelor of Science in Software Engineering (BS SE)

The BS Software Engineering program is offered through a trained foreign qualified faculty. It consists of 42

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courses with a total of 130 credits hours. The maximum duration to complete the degree is six years. The core courses focus on the fundamentals of software engineering followed by a broader range of courses through which students can choose to specialize their learning. The BS Software Engineering curriculum covers all important facets of the discipline of software engineering including project management, requirements analysis, software architecture, software development, and quality assurance. Throughout the degree program, students are exposed to the theory, techniques, tools, and practicalities of software engineering.

### Bachelor of Science in Social Sciences (BS SS)

SZABIST offers a four-year (eight semesters) BS Social Sciences degree with majors in Psychology, Sindh Studies, Sociology, Economics, and International Relations. BS Program is essentially day program and consists of 46 courses (six courses per semester) including research project (I&II) with a total of 142 credit hours. The maximum time limit to complete the BS degree is six years.

# Masters of Business Administration (MBA)

MBA program has been designed to impart quality professional knowledge and understanding of modern management tools, leadership, entrepreneurial skills, and managerial and communication competencies.

SZABIST offers MBA program with specialization in Marketing, Finance, Management, Human Resource Management, Supply Chain Management and Banking. The maximum duration to complete MBA degree program is four years.

MBA program is intended for students having a four-year bachelor degree (e.g. BS-CS, BE, BBA etc.) or 16 years of education in different disciplines. The duration to complete this program is two years with 72 credit hours. Twenty-two courses (66 credit hours) and 6 credit hours of Research Project OR Thesis spread over two semesters (03+03) are required to complete the program. Students with BBA or equivalent qualification are exempted 36 credit hours of course work and they are required to complete remaining 36 credit hours in 1.5 years. Students are also required to undertake a six week duration of internship during summer.

# **PROGRAMS & CURRICULA**

# Master of Science in Management Sciences (MS MS)

SZABIST offers MS degree with concentration in the specialized areas of Human Resource Management, Marketing, Finance and Business Analytics. The MS program is an evening program and all classes are held during week days. There are two streams available for MS. One Stream is by Course Work and other one is by Research Work. In Course Work Stream, the student is required to complete 10 courses of 3 credit hours each. In Research Work Stream, the student is required to complete 10 courses of 3 credit hours each. In Research Work Stream, the student is required to complete 8 Courses and Two IRS OR one Thesis. In both the streams, 30 credit hours are to be completed. The time limit to earn an MS degree is from 1.5 to 4 years. As per HEC guidelines, all MS students are required to clear GAT General test or HAT relevant with minimum 50% score.

# Master of Science in Computer Science (MS CS)

Master of Science in Computer Science (MS CS) SZABIST offers MS (CS) degree in three domains: Core Computer Science area and in two specialization tracks, i.e., Software Engineering (SE) and Networks & 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).

Eligibility for this program is a 4-year BS (CS) or 2-year MCS degree from a recognized institution. The candidates with a 4-year professional degree (BE, MSc, etc.) may also apply but will require to complete deficiency conversion courses (up to 12 credit hours courses to be determined in consultation with Program Manager). The programs such as BSCS, BSIT, BSSE, BSCE & BSCSE shall not require any extra courses. As per HEC guidelines, all MS students are required to clear GRE or GAT General test or HAT relevant with minimum 50% score. The maximum time limit to complete the MS degree is four years.



# Grading Plan

The following Letter Grade Plan is followed at SZABIST:

Letter	Range	Grade Point	Degree Requirement
A+	90 - 100	4.00	
А	85 - 89	3.75	
A-	80 - 84	3.50	
B+	75 – 79	3.25	
B-	66 - 69	2.75	MS Degree Requirement
C+	63 - 65	2.50	Master's Degree Requirement
С	60 - 62	2.00	Undergraduate Degree Requirement
C-	55 – 59	1.50	
F	< 55	0.00	

# **ADMISSION REQUIREMENTS**

# NOTE:

- All applicants will be required to appear in an entrance test and interview/group discussion held by SZABIST.
- 2 "E" grades in A-Level exam will not be entertained for accredited programs. i.e. BBA, BSCS, etc.
- Equivalency from Inter Board Committee of Chairmen (IBCC) is mandatory for O & A Levels/High School Diploma/IB Diploma or equivalent.
- High School Diploma or International Baccalaureate (IB) students appearing for examination from Pakistan shall have to pass Islamiat, Pakistan Studies & Urdu either with O Levels or SSC.
- Verification of last degree from Higher Education Commission of Pakistan (HEC) is mandatory for all Masters & MS students.
- Equivalency of international degrees from Higher Education Commission of Pakistan (HEC) is mandatory for all Masters & MS students.
- Students waiting for results can also apply.
- Admission of Foreign students are subject to clearance from the relevant Agencies/NoC from HEC.

# BACHELOR DEGREE PROGRAMS

# **BBA/BS** Programs

For admission in the BBA/BS programs, the candidate must have completed O-Levels (minimum 8 subjects including 5 compulsory subjects; English, Urdu, Maths, Islamiat & Pakistan Studies) and A-levels (minimum 3 Subjects)/12<sup>th</sup> Grade/Intermediate with minimum 50% marks or equivalent from a recognized institution.

For BS Computer Science and Software Engineering, candidates with mathematical background will be preferred.

# MASTERS DEGREE PROGRAMS

## Master of Business Administration (MBA)

For admission in the MBA program, the candidate must possess a 4 years bachelor degree with minimum 2.5 CGPA or 16 years of education with minimum 55% marks from a university recognized by the HEC.

### Master of Science in Management Sciences (MS MS)

For admission to MS Management Sciences candidates must possess 16 years of relevant education with minimum 55% marks/2.5 CGPA from a university recognized by HEC. GAT (General) or HAT relevant is mandatory for MS students with minimum 50% score.

# Master of Science in Computer Science

For admission to MSCS program, 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.

# Admission Test Alternates

## For Bachelors Programs

Applicants may submit a minimum 1100/1600\* score of SAT 1. The scoring of SAT 1 will be considered as follows;

SAT score	Test Marks
1500 - 1600	50
1400 - 1499	45
1300 - 1399	40
1200 - 1299	35
1100 - 1199	30

\*Candidates securing 100% marks in SZABIST's admission test will be equivalent to 50.

### For Masters Programs

50% score of GMAT for Master Programs.

# For MS Programs

GAT (General)/GRE/HAT relevant with minimum 50% score.

GAT General or relevant HAT is mandatory for MS with minimum 50% score.

# **Transfer Policies**

Transfer into SZABIST can only be accepted for candidates who have studied or are currently studying at HEC recognized universities. Transferring credits must have a minimum letter grade of B or above (or 80% marks). The request for transfers must be made at the time of admission.

Candidates will be required to clear all SZABIST admission requirements.

### **Bachelor Course Transfer**

A maximum of up to 50% credits may be considered for transfer into BBA/BS programs.

## MBA Course Transfer

- A maximum of up to 6 credits may be considered for transfer into the MBA 36 credit hours program. Research Project/Thesis is not transferable.
- A maximum of up to 36 credits may be considered for transfer into the MBA 72 credit hours program. Research Project/Thesis is not transferable.

# **ADMISSION REQUIREMENTS**

 Only relevant courses of the EMBA (SZABIST) program are transferable into the regular MBA program subject to the eligibility criteria of the MBA program at SZABIST.

# MS Course Transfer

Up to 50% of total course work completed at an HEC recognized university can be allowed for transfer at SZABIST MS program.

# SZABIST Inter-Campus Transfer

For inter-campus transfer, the candidate must fulfill the admission requirements of the given program at the local campus as per applicable transfer policy.

All courses/grades are transferable. A transfer fee will be payable by students transferring from any other SZABIST campus.

# Certificate Course Transfer

For transfer candidates from the SZABIST Certificate Programs, transferability of certificate courses is as follows:

- Maximum 05 courses are transferable in under graduate program.
- 2/3 courses are transferable in Masters or MS program.

The minimum letter grade of Certificate courses from SZABIST which are transferable to regular degree program: for MS its B- and above, for all master's program its C+ and above and for bachelor's programs its C and above.

# **Financial Assistance**

SZABIST offers financial assistance to eligible and deserving students in the form of various SZABIST funded and external donor funded scholarships as under:

- SZABIST Merit-Based Scholarship
- SZABIST Need-Based Scholarship
- General Subsidy
- Sindh Police Shaheed Scholarship
- SZABIST Employee Children Fee Concession
- SZABIST Employee Continuing Education Scholarship
- Sindh Education Endowment Fund Scholarship
- Baluchistan Education Endowment Fund Scholarship (Partial Funded / Fully Funded)
- USAID Funded Merit and Need-Based Scholarship
- HEC-Indigenous PhD 5000 Fellowship Program
- Mitsubishi Corporation Scholarship
- Orange Tree Foundation Scholarship
- Various community-based scholarships
- SZABIST also offers loan facilities as under:
- Ihsan Trust's Qarz-e-Hasna Interest Free Loan Facility
- The Citizens Foundation Financial Assistance







# FACILITIES

# Video Conferencing

SZABIST is the first educational institute in Pakistan that introduced multi-point interactive Video Conferencing (VC) technology in 2001. SZABIST regularly uses VC technology in interactive learning sessions among Dubai, Islamabad, Larkana, Hyderabad and Karachi Campuses as well as in conducting seminars, lectures and presentations with foreign universities. Video Conferencing has been the most effective mode at SZABIST in bringing in live and interactive guest lecturers from national and international experts. Video Conferencing technology opens the door to exciting and valuable learning experiences. By allowing access to and interaction with resources that might have otherwise been too inconvenient or expensive, Video Conferencing ensures a highly enriched learning environment. By taking the lead in opening this field in educational practices, SZABIST also lead in creating the most advantageous nexus between cutting-edge technology and effective learning.

# Conferences/Forums/Seminars/Guest Lectures

To increase awareness and understanding of information technology and business-related issues, many conferences, forums, seminars and guest lectures are organized regulary. These seminars and lectures are in continuation of the Institute's policy towards entrepreneurship development and networking. Seminars are conducted and attended by the leading figures from business and industry as these sessions address various business practices.

# Professional Development Courses

The Institute also offers several productivity- based certificate courses as part of its continuing education program. The courses are developed jointly by the faculty, specialists and certified trainers in specific subject areas. The aim of these courses have been to initiate discussion and modeling of practical problems, business opportunities and to improve understanding of current issues in Information Technology, Business and Management. These courses include topics such as e-Commerce, New Programming Languages & Tools, Business & Entrepreneurship Management, Selling Skills, Conflict Resolution, Effective Leadership, and Productivity, Quality-Related Issues, Brand Management and Digital Marketing.

In addition to business productivity courses, the institute arranges study groups, mentor workshops and courses for students for removing deficiencies, if any. These courses include Business Communication, Technical Writing, Public Speaking, Personality Grooming, Interviewing Techniques and learning of Statistical Package for the Social Sciences (SPSS).

07

# Classrooms/Labs/Libraries

Classroom sessions at SZABIST are quite different from other professional university setups. Teachers pay individual attention to the limited number of candidates selected purely on merit. Instructors encourage participation instead of a monologue. Students utilize various visual aids for presentations and are always on alert because of the regular unannounced quizzes, assignments and the mid-term exams. All classrooms are air-conditioned and are equipped with multimedia projectors, wall mounted screens and white boards. All classrooms are equipped with computers along with broadband intranet and internet connectivity with electricity backup through UPS.

SZABIST computer laboratories are regularly revamped with brand new labs space, furniture and latest machines with giga bite network connectivity to cater student's requirements. "Campus licensing" of latest software, including development tools, and operating systems provide an unmatchable environment compared to majority of well-reputed universities of Pakistan.

SZABIST has computing facilities supported with 24x7 broadband connectivity of 295 Mbps committed bandwidth to the internet and intranet. SZABIST is Wi-Fi enabled since 2002. Two new computer labs are added to the existing labs infrastructure. Students and guest are welcome with their BYOD and can access all network available resources wirelessly. SZABIST has also acquired Microsoft IT academy and Oracle Academic Alliance program.

SZABIST library holds a rich collection of books, Journals, Magazines, and a large number of digital libraries and online databases. SZABIST Library has six workstations through which students can access an unlimited number of journals and magazines. This facility is further extended to registered students through the SZABIST network on demand. SZABIST library provides comfortable physical spaces and furniture with a peaceful environment. Moreover, SZABIST has its own Research Centers, i.e., the Centre of Renewable Energy Research (CRER), and Sustainable Development Research Centre (SDRC) with their own specialized library for reference and general reading.

Moreover, SZABIST has its own Research Centers, i.e., the Centre of Renewable Energy Research (CRER), and the Sustainable Development Research Centre (SDRC) with its specialized library for reference and general reading.

SZABIST established Smart Lab equipped with tremendous high speed 7<sup>th</sup> generation laptops for students. These laptops are connected with SZABIST network through Wi-Fi. A state of the art Smart screen is also available for teacher and students. They can interact with each other in more effective and robust way.

# Research Committee (RC)

SZABIST places high emphasis on research & development and devotes conscious efforts to promote research culture among faculty and students alike. In this regard, a Research Committee (RC) is constituted to coordinate, record, and formalize diverse research activities across different departments and campuses to bring harmony and create an impact for national and international recognition of the university. Research publications produced by faculty and students are given a handsome remuneration depending on the level and merit of publications, vetted by RC. All sorts of participations in national and international conferences by the faculty & staff are approved by the RC. This may also propose a change in research policy for the university to BASR.

## Board of Advanced Studies and Research (BASR)

SZABIST has also constituted a Board of Advanced Studies and Research (BASR) which holds its meetings twice a year to discuss and approve/disapprove, the recommendations sent by Doctoral and Research Committees. This is chaired by the President of SZABIST and co-chaired by the Vice President (Academics). The board further considers and reports to the authorities on the award of research degrees, proposes by-laws and policies regarding MS/PhD programs (across all campuses) and the initiation, execution, and award of research degrees; provides approvals on appointments of supervisors for postgraduate research students and approves titles and synopses for their theses or dissertations, as recommended by DC. The decisions taken in BASR are ratified in the Academic Council.



# Academic Council

Academic Council is the highest academic statutory body of SZABIST. The Council is responsible for developing and maintaining a mechanism to offer quality education across all the campuses of SZABIST. The Council, in general, takes into consideration matters related to introduction of new program, changes in existing program structure, introduction of new courses, revision in course outlines, policy framework related to entry and exit of students and policy matters pertaining to research and development. The regular agenda items are forwarded by Board of Faculty (BoF) and Board of Advanced Studies and Research (BASR). The frequency of Academic Council's Meeting is twice a year and the meeting is chaired by the President and Co-chaired by Vice President Academics of SZABIST. The members include Deans, Registrar, HoCs, HoDs and external experts from academia and industry.

# Office of Research Innovation and Commercialization (ORIC)

ORIC is an academic support department in Shaheed Zulfiqar Ali Bhutto Institute of Science & Technology (SZABIST) that provides comprehensive services for research innovation and commercialization. It serve as a bridge in between multiple faculties of SZABIST and produces quality research and innovative products for filing patents / trademarks / designs.

ORIC is the epicenter of all research and development activities within all campuses of SZABIST. It provide assistance to faculty members and research students in producing research article / projects, at national as well as international level and arranges periodic workshop / training / seminar / conferences.

ORIC shorten the gap between acquired knowledge and required knowledge within the organization. The complete working of ORIC evolve in coaching, counseling, recognition and feedback. The leadership of ORIC is concerned with integrity, impartiality, professionalism, partner focus, efficiency, and mutual respect.

Team ORIC is continuously engaged in providing strategic direction to all research and development initiatives produced within the territory of SZABIST, and in promoting joint research activities with other horizontal and vertical partner institutions.

ORIC strengthen the relationship with industry, government and non-government organizations for promoting entrepreneurship, technology transfer, and commercialization activities produced.

ORIC concentrate on sustainability and reliability of the research products and has a mandate to earn yearly revenue from licensing, royalties, policy advocacy and other related activities.

Moreover, ORIC also invest in capacity development of the faculty, staff and other researchers in the university. It periodically arranges exhibitions, showcasing events, industry linkages fairs, and seminars at one side while training, workshop, innovation, and commercialization seminars on other side.

## WHY ORIC

In recent millennium, global knowledge economy has strengthened the need for strategic partnerships that go beyond their traditional roles as collaborators.

World-class research universities are at the forefront of pioneering such partnerships. They are intended to run longer, invest more, look beyond and sharpen the competitiveness of industries, universities and regions.

Keeping in view of these challenges, the Office of the Research, Innovation and Commercialization has been initiated at SZABIST, Hyderabad.

The mission of ORIC as outlined by HEC is "Transforming Pakistani universities to drive high impact innovation, applied research and entrepreneurship". The ORIC's vision is to enable and lead Pakistan's transformation to a knowledge-based economy dependent upon innovation and entrepreneurship.

The Office of Research Innovation and Commercialization is being established to link research and commercialization from SZABIST with emerging and existing firms across Pakistan and around the world.

As an umbrella, ORIC is meant to work closely with the researchers and on campus Incubators and S&T Park. The ORIC office also serves as a conduit to local, regional and federal partners to ensure research results aid the growth of Pakistan's economy.

ORIC is meant to work on commercialization of research and helping startups to incubate, grow, create new jobs, products, services, markets, carry out innovation and bring in funding. The following are the prime activities of ORIC SZABIST:

- Managing applied research, innovation and commercialization activities within the universities through industrial collaboration;
- Intellectual Property Commercialization through documentation, evaluation, protection, marketing, licensing and royalties agreements;
- Partnership with national / foreign universities, government departments, and non- government organizations for reports, publication, contracts and consultancies;
- Participate in government programs and in securing funding for research from public and private sector;
- Organizing training, workshop, seminars, focus group discussions for maintaining academia - industry linkage as well as capacity development;
- Help final year students through startups and joint ventures.

## ORIC IN 2022

ORIC SZABIST is continuously strengthening its relationship with the faculty and non-faculty members of SZABIST inwards, and with government & non-government organizations, industry and other higher educational institutions outwards.

Main purpose of this association is to develop a long term industry – academia relationship that would cadre the essential elements of the fourth wave of industrial revolution (Industry 4.0).

Industry 4.0 is the origin of a new revolution since it integrate virtual and physical system of manufacturing and improved productivity, efficiency and quality of the product. Big Data, artificial intelligence and digital conversion of industrial processes, are essential ingredients of this wave.

ORIC has compiled its Five Year Plan with special emphasis of industry (4.0). Sustainable Competitive advantage is the only objective of this proposal which can be achieved through training & development, coaching and guiding the future scientist and researchers. This plan has also defined "Input – Throughput – Output" strategy that creates enabling environment for linking academia with the industry.

ORIC SZABIST has completed its half journey for academic session 2021-22 and achieved the target of Research Excellence through: competitive grant management, coordination & networking, policy advocacy, case studies and civic engagement events. Similarly, ORIC is promoting Innovation & Commercialization activities through: IP legislation, IP linkages, networking & coordination, and commercialization activities.

ORIC has two ready to use publication i.e. Research Funding Window (RFW) and Country Profile - Research & Innovation

Indicators (CPRII). ORIC SZABIST has also submitted research projects on Higher Education Commission (HEC) supported grants National Research Program for Universities (NRPU), Local Challenge Fund (LCF), and Technology Transfer Support Fund (TTSF).

ORIC SZABIST has a functional website and about to publish a magazine named "ORIC Nama". ORIC has also started an exclusive lecture series with the caption "ياوور نياكاروبار"

"Naya Dour Naya Karobar". ORIC has completed the survey on Unpaid Care Workers in collaboration with Parliamentarian Commission for Human Rights (PCHR). ORIC has also conducted numerous interactive session with the title "ORIC Ambassador". Similarly, ORIC has developed its external as well as internal Data Bank for research. ORIC is also in the middle to conduct a showcasing event "FYP Conference". Finally ORIC has completed its homework to take part in Kamyab Jawan Program announced by government.

For further information about ORIC SZABIST please visit oric.szabist.edu.pk.

# Data Centre

The Data Center has been designed with the Telecommunication Industry Association's (TIA-942) Tier-II international infrastructure standards including raised flooring, redundant HVAC precision units, fire detection, alarm & suppression system, precision UPS & power system, CCTV and access control system for remote monitoring. The Data Center is responsible for providing LAN & WAN connectivity, Web Services, Video Conferencing, hosting private cloud services and Server Farm (including Domain Controllers, Proxy, Email, Web, Network Management, Electronic Bulletin Board, ZABDESK ERP and many more) and other related services of all five campuses, ZABTECH and IMC.

## **Computing Resources**

Computing resources of the data center is comprising of 20 TFLOPS of processing speed with high performance and reliable 100 Tera Bytes of storage capacity. The data center is equipped with UPS backup and 12-ton redundant precision cooling system for reliability of data center and protected by FM-200 based Automatic Fire Detection and Suppression System and manual fire extinguishers. CCTV cameras and Access Control systems are intact for effective surveillance and restricting unauthorized access to the facility.

## **Campus Network Infrastructure**

Campus network is based on n-tier architecture which includes security, core, distribution and access layers. The backbone comprises three upper layers i.e. security, core and distribution as well as primary & backup fibre optic link connectivity for all buildings. In Data Center, redundant Chassis-based routers, core and distribution switches and firewalls with high transmission rate are commissioned, where device and link redundancy has been maintained at every level to ensure un-interrupted ICT services to users. Gigabit Access Network has also been commissioned to ensure high-speed computing at user end, where access switches of high switching capacity are installed to handle data and multimedia traffic, efficiently. Proper NMS server installed to monitor and manage the whole network infrastructure, which can send alert on any fault, performance bottleneck and/or security issues.

## Wireless Mesh Network

A secured Wi-Fi mesh network has been implemented throughout the campus. Wireless indoor and outdoor Access Points (APs) have been installed to give internet/intranet access to students, faculty and staff employs latest wireless protocol 802.11n with each AP providing a bandwidth up to 300 Mbps to the users.

# Newsletters

SZABIST publishes Newsletter on regular intervals from all its campuses to update about the activities taking place at the campuses.

# ZABFM

# (www.zabfm.org)

ZABFM is an in-house FM broadcasting station, an initiative taken by Shaheed Zulifkar Ali Bhutto Institute of Science & Technology and it was a substantive step into the field of education. It is an honor for the nation as we are producing the talented and most efficient candidates in the form of great speakers to the nation along with the responsibility of spreading knowledge through the airwaves.

It is a streaming radio broadcast station exclusively to impart and disseminate education to the students.

The 24/7 programming schedule covers various subjects of life like, Career Counseling, Planning & Development, Education, Infotainment, Awareness, Research, Documentaries, Talk Shows, Sports, Travel, Science & Technology, Media, Culture & Society, Technology & Inventions, Info-tech and social order, etc.

# Student Support Services

The main campus of SZABIST has been fortunate to have a unique and diverse student body with a healthy record of activities and a proud history of achievements in the realms of public speaking, sports, entrepreneurship and technology.

Since 2014, with the establishment of the Department of Student Support Services a more organized and focused approach has been adopted with the aid of Student Advisory policies and guidelines for activities in the form of standard operating procedures and financial prudence guidelines with emphasis on paperwork and documentation for record keeping all of which added much needed structure to student activities at the institute.

In 2015, the same system was gradually introduced at other campuses of SZABIST and by now they have all had Five annually elected student council bodies whereas the main campus has been fortunate enough to have held elections every year with a trained group of students working in the council and its subsidiary divisions and student societies. Our vision aims to provide students with a platform that allows them to conduct activities which work towards the development of a stronger, wiser and a more united student populace in Karachi. It works to inculcate in young minds the values of unity, tolerance, inclusion and leadership and through engagement with other campuses of SZABIST and universities across the country realize the objectives of our core areas of focus, nationally as well.

With the programme of student activities focusing mainly on thematic areas/pillars like Leadership, Art and Culture, Community Services and Civic Engagement, Sports and Technical/Professional, the programme aims to train students to tackle real world issues through special focus on the above mentioned in order to produce trained and rational all rounded human beings who have an appreciation for art and culture, think critically about their existential state and aim to serve society in the capacity of socially responsible leaders.

Also, all students are encouraged to partake in the wide-range of activities on offer as part of any of SZABIST's activities programs/pillars for which dedicated Activities Coordinators and Coaches reporting back to the department are hired and professionals from established organizations also involved as partners in training thus, enhancing and helping students to better utilize their skill-sets in the real world culminating in offering students a platform through which they may implement what they have learnt. Furthermore, the projects division encourages students to develop on their ideas and with guidance and perseverance, the system facilitates and supports the initiatives, a newer approach to adding value to the system and student activities base initiated with Art & Discourse for Change, a project funded by a substantial grant. The department along with managing the SZABIST Student Council (SSC), its fifteen student societies and associated activities and student projects, coordinates with and guides SSC chapters/Student Advisors in other campuses as well.

It also works to maintain discipline at the institute in order to provide a safe and conducive environment for students. An annual Orientation are also looked after and lastly, the services of a professional clinical psychologist for all forms of personal counselling are also available for all students on campus.

# SZABIST Student Council (SSC)

# What is SSC?

Established in 2009, SSC has been a union of hardworking, ambitious and talented individuals across all programs of SZABIST elected under the Election Commission of SZABIST. The selection of SSC workforce is by means of an entrance test and screening process all on an annual basis to form the student government at the institute, under the supervision of Ms. Hareem Siddiqui, Student Advisor, Student Council and SZABIST Election Commission at SZABIST.

Furthermore, it acts as a parent body to its chapters in other campuses of SZABIST namely, SSC-Hyderabad Chapter, SSC-Islamabad Chapter and SSC- Larkana Chapter and SSC-Dubai Chapter.

# What does SZABIST Student Council (SSC) do?

SSC aims at helping to explore the talents of all students whilst, along with playing an intermediary role between the administration/management and student body at large, working towards adding value to student life at SZABIST. Moreover, it organizes and hosts seasonal entertainment events to encourage networking among students, staff members and the faculty. Our yearly plans include Beach Trips, comedy nights, Qawali Nights and theme based events. Along with entertainment, SSC has fruitful history of organizing various Conferences, Seminars and Workshops to connect students with the industry and learn from their experiences. One of the finest illustrated events of the SCC is the LEAD (Youth Leadership Conference).

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The Executive Board of SSC is the central leadership organization within the Council. The Board consists of the President (SSC), the Vice President (SSC), the Secretary General (SSC) and the Treasurer (SSC). The agenda of each year is reviewed by the Executive board for the 5 pillars attached to SSC elaborated below.

### The Five Pillars of SSC

The Leadership Pillar cultivates a sense of self-awareness amongst students through the identification of core strengths, vision, aims and values to become a leader and effectively lead change, conflict resolution, team motivation and reflective thinking skills. There are two societies working under the leadership pillar.

SZABIST Oratory Society
 SZABIST Law Society
 ZABMUN

The Sports Pillar enables students to achieve excellence in sports which increases physical health of students and improves team work, coordination, cooperation, and mental health.

The Sports Society at SZABIST holds various activities to keep the students energetic and active. The society has a vibrant recognition for organizing ZAB Olympics as a major event which is an inter-university sports tournament.

The Arts and Culture Pillar flows creative ethos of students with intellectual and aesthetic understanding of the craft and technique of theatre arts and humanity. There are three societies under the Arts and Culture Pillar.

Performing Arts Society
 Literary Society
 Culture Society

The Community Service Pillar holds focal players in Pakistan's fight against climate change inculcating the message of sensitivity, inclusivity and equality in all activities. There are total three societies under the Community Service Pillar.

Lions Club
 Rotaract Club
 SZABIST Social Sciences Society

The Professional and Technical Pillar develops a set of professional skills which refine and improve the technical skills of mathematics, science and engineering onto different areas such as economic, environmental, social, political and sustainable development. There are total five societies under the Professional and Technical Pillar:

- 1. Association for Computing Machinery
- 2. IEEE SZABIST STUDENTS' BRANCH
- 3. Entrepreneurship Society
- 4. ASME
- 5. Biosciences Society

All student associations, clubs and student societies are formed as per a prescribed procedure working under the aegis of the SZABIST Student Council. Student Council members have rock solid history of conceptualizing and leading projects and events which work to advance the social and civic development of not only the student body but also of the community.

# **Executive Development Center (EDC)**

The Executive Development Center (EDC) at SZABIST Hyderabad facilitates students in completing their degree requirements, professional development, and job/internship placements.

Throughout academic tenure, the students are encouraged to attend customized trainings, personal development programs, webinars, Zabtalk sessions and presentations by industry experts who share their experiences to help them understand the transition from campus to the corporate world.

EDC compiles students' profiles and publishes the annual graduate directory in order to provide SZABIST graduates to credible organizations.

EDC engages with the Alumni for relationship building, corporate networking and profile update. A body with a name SZABIST Alumni Global Association (SAGA) is there to build strong bond with alumni. The vision of SAGA is "To empower the SZABIST Alumni for exploring new avenues and expanding knowledge for continuing their journey of self-discovery".



## Job & Internship Placements

In collaboration with the industry, EDC arranges job/internship recruitment drives and management trainee programs by reputable national and multinational companies. EDC facilitates students for internships and job openings in the corporate sector throughout the year.

An annual "Career Fair" is held in the beginning of every year at the campus in which leading companies are invited to discuss their recruitment policies and procedures, their current resource requirements and future vacancies. The students receive an opportunity to interact with company representatives directly.

To bridge the gap between classroom and market, SZABIST has instituted a mandatory internship program. Apart from enabling students to get the feel of an office environment, internships expose them to potential employers for possible recruitment.

# **Eligibility for Internship**

- Masters Degree students with at least two semesters completed at SZABIST.
- Bachelors degree students with at least six semesters completed at SZABIST.
- Minimum duration of internship is six weeks.
- Preference is given to those students who are about to graduate and need an internship as a pre-requisite for their degree completion.

# ZABSolutions

SZABIST has its own software house that fulfills the software needs of the SZABIST. The state-of-the-art applications that ZABSolutions has developed and evolved are successfully supporting and fueling the complete academic process of the SZABIST. The complete academic process flow of students from filling the online admission form to the printing of transcript and degree runs on ZAB LMS (ZAB Learning Management System).

Several educational institutions in Pakistan have shown their interest in ZAB LMS. The academic process of several institutions in Pakistan will soon be migrated onto our ZABLMS.

The ZABSolutions incubator help students foster their software skills. Students can access ZABSolutions' resources and knowledge to develop their skills and competencies,

which are important to compete in the market. Following are the objectives of the incubator:

- 1. Provide a practical framework for knowledge and technology transfer to the students
- 2. Develop the confidence and competencies for building e-firms
- 3. Involve students in software research and development
- Enhance partnership between industry and academia
   Provide faculty and the students with innovative

# National and International Linkages and Collaborations

SZABIST is a registered member of the following international

support facilities

and national associations:

- 1. International Association of Universities (IAU), Paris
- 2. Association of Commonwealth Universities (ACU), London
- 3. The Association to Advance Collegiate School of Business (AACSB), Singapore
- 4. Asia-Pacific Quality Network (APQN), People's Republic of China
- 5. The Talloires Network, USA
- 6. The Chartered Institute of Logistics and Transport (CILT), UK
- 7. Management Association of Pakistan (MAP), Karachi
- 8. Marketing Association of Pakistan (MAP), Karachi
- 9. Human Resource Development Network (HRDN), Islamabad

Moreover, SZABIST has signed MoUs, articulation and collaboration agreements with the following national and international universities and institutions:

# 1. Association of Chartered Certified Accountants ACCA, UK

This MoU provides exemption from ACCA papers to Bachelors of Business Administration and BS Accounting & Finance courses at SZABIST.

# 2. Balochistan Education Endowment Fund Scholarship, Pakistan

Under this MoU, Government of Balochistan provides fully funded scholarship to 5-6 meritorious and financially challenged students of SZABIST who are local domicile certificate holders of Balochistan. The scholarship covers the entire duration of the degree program.

# 3. Coventry University, UK

Through this MoU, SZABIST students enrolled in Bachelors of Arts in Business Studies (BABS) are conferred Coventry University degree on completing two years of education at SZABIST and one year at Coventry University, UK.

## 4. Dr. Essa Laboratory and Diagnostic Centre

Through this collaboration, SZABIST employees can avail varying discounts on health related tests, the parties are also working together on research in the field of Bioscience technology. Dr. Essa Laboratory is providing opportunities of jobs and internships to SZABIST graduates.

# 5. Ihsan Trust, Meezan Bank Pakistan

The MoU with Ihsan Trust is aimed at provision of Qarz-e-Hasna (Interest-free Loan) facility up to 100 % of tuition fee to SZABIST students.

# 6. Integration Xperts (Private) Limited, Pakistan

Under this MoU, Integration Xperts (Private) Limited and SZABIST conduct Joint Research and Development on Bio-Sciences Health Tech Solutions such as Mobile Diagnostics, Diabetes Management and Remote Health Monitoring of Infants and Old Age people.

# 7. International Center for Chemical and Biological Sciences, University of Karachi, Pakistan

This MoU provides a framework for mutually beneficial cooperation between the two parties through different activities and research projects.

# 8. International Committee of the Red Cross (ICRC), UK

Through this MoU, SZABIST Law Department is committed to work with ICRC to promote and implement legal changes for protection of health care against violence. Both parties to collaborate for improved protection of health care workers, patients, facilities and transport through mobilization of a broad Community of Concern and advocacy.

# 9. Mitsubishi Corporation, Japan

Mitsubishi Corporation through this MoU provides 100% scholarship to the students enrolled in the Media Science BSMS program annually.

## 10. NOWPDP

NOWPDP a Disability Inclusion Initiative and SZABIST Karachi-BBA have joined hands for supporting initiatives for persons with disabilities in the province of Sindh. Both the parties help each other by facilitating access to opportunities and services for persons with disabilities.

## 11. Orange Tree Foundation OTF, Pakistan

SZABIST have collaborated with Orange Tree Foundation for providing scholarships for the students of SZABIST. This MoU ensures equitable opportunities of education for all the needy yet bright students. To bring them at par of mainstreaming through creating a critical mass of talented youth for the development of society.

## 12. Sindh Police Shaheed Scholarship

This MoU enables children of Shaheed Police Officers of Sindh to study at SZABIST on fully funded scholarship. The MoU is applicable to the Police employees who embraced SHAHADAT while performing their duty within the jurisdiction of the Sindh province.

## 13. Tabba Kidney Institute

SZABIST and Tabba Kidney Institute have joined hands to participate in collaborative research and in capacity building activities. Both parties plan to conduct academic research to get further insights into the areas of Urology. Students of Bachelor of Science in Public Health (BSPH) can get the opportunity of certificate-based volunteer work in TKI. To foster increased interaction among TKI research staff, SZABIST faculty and advanced / graduate students engaged in scientific and scholarly research in areas of mutual interest.

## 14. The Citizen Foundation, TCF Pakistan

As part of social responsibility, SZABIST and TCF have collaborated to facilitate TCF students with admission fee waiver, and scholarship opportunities to study in any of SZABIST degree programs.

# 15. The Chartered Institute of Logistics and Transport (CILT), UK

SZABIST has signed a MoA with CILT for introducing certification in logistics and transport. To attain this certification, a total of three mandatory courses have to be completed.

## 16. University of London, UK

SZABIST is a registered center of University of London for giving tuitions for its LLB program.

# 17. Getz Pharma – BIDE – SZABIST (tripartite MoU)

Getz Pharma, Baqai Institute of Diabetology & Endocrinology BIDE and SZABIST have joined hands to foster a culture of collaboration to improve healthcare

indicators in Pakistan. This collaboration shall allow experienced physicians, researchers and students at BIDE and SZABIST in scientific research to generate valuable insights into the areas of Non Communicable Diseases, particularly Diabetes. The three patrons plan to engage in activities centered on capacity building of healthcare providers.

**18. Greenstar Social Marketing Pakistan Limited** Through this MoU, SZABIST and Greenstar Social Marketing have decided to work on the field of research pertaining to Family planning and child health.











# VISION

SZABIST Faculty of Management Sciences aspires to become one of the leading entities for excellence in business education, service, research and innovation.

# MISSION

SZABIST Faculty of Management Sciences is committed to:

 Produce highly qualified business professionals to meet dynamic and challenging contemporary needs;

- Generate knowledge and expertise for business and economic solutions through research;
- Create an enabling environment for corporate and entrepreneurial outlook;
- Serve the community through student, faculty, and alumni collaboration.

# BBA

SZABIST offers a four-year (eight semesters) BBA degree program of 144 credit hours. For the BBA program, students are required to complete 46 courses and a 03 credit hours Business Project & 03 credit hours Community Service Project. The courses include 42 compulsory courses and 4 electives from Management, Marketing or Finance. To obtain the BBA degree, students have to complete 144 credit hours and an internship. The degree needs to be completed within six years. BBA program is an ACCA accredited program; those who complete BBA from SZABIST, Hyderabad, will get an exemption in 06 out of 09 ACCA Foundation papers (F1, F2, F3, F5, F7 and F9).

# First Year

# Fall Semester

BA 1108	IT in Business
BA 1109	Personal Management and
	Communication
BA 1203	Management Principles
BA 1206	Oral Communication and Presentation
	Skills
BA 1113	Islamic Studies
	a

BA 2307 Sociology

# **Spring Semester**

- BA 1101 Introduction to Accounting
- BA 1102 Microeconomics
- BA 1105 English Writing Skills
- BA 1204 Maths for Business
- BA 1213 Pakistan Studies
- BA 2312 Human Behavior

### Second Year

# Fall Semester

- BA 1201 Financial Accounting
- BA 1211 Logic and Critical Thinking
- BA 3504 Organizational Behavior
- BA 2303 Marketing Principles
- BA 1202 Macroeconomics
- BA 2406 Business and Electronic Communication

# **Spring Semester**

- BA 2311 Business Statistics
- BA 2411 Cost and Management Accounting
- BA 2301 Introduction to Business Finance
- BA 2402 Retail Management
- BA 2403 Business Ethics
- BA 3507 Consumer Behavior

## Third Year

# **Fall Semester**

- BA 3501 Financial Markets and Institutions
- BA 3508 Media Management
- BA 3605 Statistical Inference
- BA 4706 Development Economics
- BA 4801 Law and Taxation
- BA xxxx University Elective -I (as offered by Campus)

# **Spring Semester**

- BA 3601 Financial Management
- BA 3602 Marketing Management
- BA 3603 Business Research Methods
- BA 3607 Operations Management
- BA 4804 Human Resource Management
- BA xxxx University Elective-II (as offered by Campus)

# Fourth Year

# Fall Semester

- BA 3502 Entrepreneurship
- BA 4814 Project Management
- BA 4705 Services Marketing
- BA 4710 Business Project
- BA 4xxx Elective-I
- BA 4xxx Elective-II

# **Spring Semester**

BA 3505	Quantitative Skills
BA 3609	Pakistan Economy
BA 4704	Management Information Systems
BA 4810	Community Service Project
BA 4xxx	Elective-III
BA 4xxx	Elective-IV



# UNIVERSITY ELECTIVE

(To be offered by the campus as Compulsory courses)

BA 3506	Foreign Languages
BA 3519	Current Affairs
BA 3613	World Economy
BA 3614	Business Analysis and Forecasting*
BA 3619	Enterprise Management
BA 4701	Islamic Banking and Finance*
BA 4707	Marketing Research*
BA 3515	Graphic Design for Multimedia*
BA 3621	Professional Development
BA 3521	Auditing
BA 3522	Social Advocacy and Community Service
BA 3622	E-Commerce

# **ELECTIVES**

## Finance

- BA 4115 Derivatives
- BA 4214 Micro Finance
- BA 4218 Financial Research
- BA 4735 Islamic Banking and Finance\*
- BA 4719 Investment Banking
- BA 4724 Financial Modeling
- BA 4727 Dynamics of Banking
- BA 4734 International Banking
- BA 4752 Financial Reporting and Analysis
- BA 4756 Econometrics
- BA 4831 Portfolio and Investment Management
- BA 4833 Security Analysis
- BA 4834 Treasury and Funds Management
- BA 4855 Financial Risk Analysis
- BA 4867 Business Analysis and Forecasting\*

# Marketing

- BA 4116 Supply Chain Management
- BA 4125 Emerging Media
- BA 4126 Trade Marketing
- BA 4217 Experiential Marketing
- BA 4836 Marketing Research\*
- BA 4721 Advertising
- BA 4722 Brand Management
- BA 4739 Export Marketing
- BA 4815 Event Management
- BA 4816 Industrial Marketing
- BA 4821 Media Planning
- BA 4824 Sales Management
- BA 4842 Graphic Design for Multimedia\*
- BA 4859 Product Innovation and Design
- BA 4866 Integrated Marketing Communications

BA 4762 Digital Marketing BA 4868 Marketing Analytics

### Management

- BA 4116 Supply Chain Management
- BA 4117 Salary and Compensation
- BA 4711 Change Management
- BA 4712 Industrial Relations and Labor Laws
- BA 4713 Leadership and Motivation Techniques
- BA 4812 Recruitment and Selection
- BA 4813 Training and Development
- BA 4815 Event Management
- BA 4826 Talent Management
- BA 4837 Performance Appraisal
- BA 4844 Operations Research

\*University Elective can be taken as an Elective if not offered by the Campus as a compulsory course.

All courses may not necessarily be offered every year. Alternate courses may be substituted as and when required. Full-time academic load is six courses (18 credit hours). All students are required to register for full load in the first semester.

# Internship

The internship is scheduled for summer at the end of third year. After completion of the 6-week internship, all students are required to submit a comprehensive report giving details of their experience and learning.



# **BS** Accounting & Finance

BS (A&F) is a four years (eight semesters) program and consists of 144 credit hours of teaching. Students are required to complete 46 courses and a 6 credit hours of final year project (to be offered over last two semester) along with six weeks of internship to graduate. The maximum duration to complete this degree program is six years. Graduates of BS (A & F) will get exemptions in nine papers of both Institute of Chartered Accountants of Pakistan (ICAP) and Association of Chartered Certified Accountants (ACCA), UK.

SZABIST also offers 2.5-year Bachelor of Science (Accounting & Finance) program exclusively for CAF qualified students of the Institute of Chartered Accountants of Pakistan (ICAP). CAF qualified students are exempted 60 credit hours (20 course) of course work and have to complete 78 credit hours (26 courses) of course work and a 6 credit hours Research Project (to be offered over last two semester).

# First Year

## **Fall Semester**

- AF 1101 Business Mathematics\*
- AF 1102 Computer Concepts and Applications\*
- AF 1104 Introduction to Financial Accounting\*
- AF 1105 Pakistan Studies
- AF 1203 Communication Skills
- AF 1205 Islamic Studies/Humanities

# Spring Semester

- AF 1103 English Comprehension\*
- AF 1207 Business Management and Ethics\*
- AF 1201 Advanced Financial Accounting\*
- AF 2303 Introduction to Psychology
- AF 2304 Introduction to Sociology
- AF 2405 Principles of Microeconomics\*

# Second Year

# Fall Semester

- AF 1202 Calculus for Business Studies
- AF 1206 Principles of Marketing
- AF 2302 Cost Accounting\*
- AF 2305 Organizational Behavior\*
- AF 3505 Principles of Macroeconomics\*
- AF 4703 Introduction to Business Finance\*

# **Spring Semester**

- AF 2301 Business and Technical English Writing\*
- AF 2401 Management Accounting
- AF 3501 Accounting and Financial Information Systems
- AF 2402 Management Information Systems
- AF 2404 Money and Banking
- AF 2406 Statistics and Probability\*

# Third Year

# Fall Semester

- AF 3607 Corporate Accounting\* AF 3511 Auditing -I\*
- AF 3506 Statistical Inference
- AF 3507 Financial Institutes and Markets
- AF 3606 Taxation\*
- AF 3608 Islamic Banking and Finance

# **Spring Semester**

- AF 3611 Auditing-II\*
- AF 2403 Marketing Management
- AF 3605 Financial Reporting\*
- AF 4701 Business and Labor Law\*
- AF 4702 Financial Management
- AF 3609 Business Research Methodologies

# Fourth Year

## Fall Semester

- AF 4xxx Accounting Elective-I
- AF 4707 Company Law\*
- AF 4801 Corporate Finance
- AF 4xxx Finance Elective-I
- AF 3603 e-Commerce
- AF 4xxx Final Project-I

# **Spring Semester**

- AF 1204 Introduction to HRM
- AF 2306 Pakistan Economic Policy
- AF 3504 Entrepreneurship and Small Business Management
- AF 4xxx Accounting Elective-II
- AF 4xxx Final Project-II
- AF 4xxx Finance Elective-II

\*Exempt courses for CAF qualified students of Institute of Chartered Accountants of Pakistan (ICAP)

All courses may not necessarily be offered every year. Alternate courses may be substituted as and when needed. Fulltime academic load is 18 credit hours. All students are required to register for full load in first semester.

# Internship

The internship is scheduled for summer at the end of third year. After completion of the 6 week internship, all students are required to submit a comprehensive report, giving details of their experience and learning.

# **ELECTIVES**

# Accounting

- AF 4722 Advanced Performance Management
- AF 4721 Advanced Audit and Assurance
- AF 4822 Strategic Business Reporting
- AF 4723 Forensic Accounting
- AF 4821 Public Sector Accounting

# Finance

- AF 4725 Analysis of Investment and
- Management of Portfolios
- AF 4825 International Finance
- AF 4824 Financing of SME
- AF 4823 Financial Risk Analysis
- AF 4826 Quantitative Data Analysis
- AF 4724 Advanced Financial Management
- AF 4727 Dynamics of Banking
- AF 4728 Financial Modeling
- AF 4726 Behavioral Finance
- AF 4827 Business Analysis and Forecasting

Courses are subject to change.





# MBA Program

For students with 4-year undergraduate degree/16-years of education, the minimum duration of the MBA program is 2 years. Twenty-two courses (66 credit hours) and 6 credit hours of Research Project OR Thesis spread over two semesters are required to complete the program. Students are also required to complete a six-week internship. The maximum duration to complete MBA program is 4 years.

# First Year

## **Fall Semester**

- BA 5301 Financial Accounting\*
- BA 5419 Business Management and Ethics\*
- BA 5418 Managerial Communication\*
- BA 5502 Quantitative Tools for Managers\*
- BA 5302 Microeconomics\*
- BA 5106 Marketing Management\*

## Spring Semester

- BA 5402 Macroeconomics\*
- BA 5205 Human Resources Management\*
- BA 5411 Cost and Management Accounting\*
- BA 5401 Introduction to Business Finance\*
- BA 5405 Statistical Inference\*
- BA 5501 Applied Research Methods

## Second Year

# **Fall Semester**

BA 5308 International Business
BA 5601 Strategic HRM
BA 5105 Financial Management\*
BA 5xxx Elective-I
BA 5xxx Elective-II
BA 5508 Research Project-I (3 Credits) OR
BA 5507 Thesis-I (3 Credits)

### Spring Semester

BA 5104 Strategic Management
BA 5208 Strategic Finance
BA 5203 Strategic Marketing
BA 5xxx Elective-III
BA 5xxx Elective-IV
BA 5608 Research Project - II (3 Credits)
BA 5607 OR Thesis-II (3 Credits)

\* Exempted courses for BBA and Equivalent degree holders

The students with 4-year BBA/BABS/BS (Accounting & Finance)/BS (Entrepreneurship) or equivalent degree are exempted 36 credit hours of course work. The minimum duration of degree for such students will be 1.5-year with the following program structure:

# First Year

# Fall Semester

- BA 5501 Applied Research Methods
- BA 5203 Strategic Marketing
- BA 5601 Strategic HRM
- BA 5208 Strategic Finance

Spring Semester

BA 5104 Strategic Management

- BA 5xxx Elective-I
- BA 5xxx Elective-II
- BA 5508 Research Project-I (3 Credits) Or
- BA 5507 Thesis-I (3 Credits)

# Second Year

# Fall Semester

BA 5308 International BusinessBA 5xxx Elective-IIIBA 5xxx Elective-IVBA 5608 Research Project-II (3 Credits) OrBA 5607 Thesis-II (3 Credits)

All courses may not be offered in every semester. Alternative courses may be substituted as and when required.

\*A student may take either Research Project or Thesis.

# ELECTIVES

# Finance

- BA 5131 Advance Financial Management
- BA 5132 Analysis of Financial Statements
- BA 5133 Corporate Finance
- BA 5134 Derivatives
- BA 5135 Financial Markets and Institutions
- BA 5138 Econometrics
- BA 5139 Financial Risk Analysis
- BA 5151 International Finance
- BA 5155 Mergers and Acquisitions
- BA 5179 Commodity Pricing
- BA 5187 Business Analysis and Forecasting
- BA 5229 Financial Modeling
- BA 5232 Portfolio and Investment Management
- BA 5254 Fundamentals of Financial Engineering
- BA 5262 Behavioral Finance
- BA 5284 Theory and Practice of Lending
- BA 5192 Financial Management Policy
- BA 5294 Venture Capital and Private Equity
- BA 5298 Financial Reporting and Analysis
- BA 5454 Real Estate Investments and Finance

### Banking

- BA 5137 International Banking
- BA 5175 Banking Operations
- BA 5184 Financial Product Regulations
- BA 5231 Islamic Banking and Finance
- BA 5235 Treasury and Funds Management
- BA 5244 Investment Banking
- BA 5273 Prudential Regulations
- BA 5278 Banking Crises and Management

## Human Resource Management

- BA 5114 Leadership and Motivation Techniques
- BA 5118 Compensation Management
- BA 5117 Performance Appraisal
- BA 5159 Salary and Compensation
- BA 5164 Human Resources Information Systems
- BA 5165 Job Analysis and Design
- BA 5167 Talent Management and Succession Planning
- BA 5185 Leadership Development
- BA 5193 HR Operations and Business Partnering
- BA 5196 Conflict Resolution
- BA 5215 Recruitment and Selection
- BA 5216 Training and Development
- BA 5239 HR Policy Development
- BA 5251 Human Resource Development
- BA 5285 Performance Management

- BA 5292 HR Analytics
- BA 5297 Human Capital Development and Analytics
- BA 5335 Human Resource Audit
- BA 5332 Contemporary Issues in Human Resource Management
- BA 5435 Human Resource Management and Technology
- BA 5452 Psychological Contract in Organizations

# Management

- BA 5111 Business Process Re-engineering
- BA 5112 Change Management
- BA 5113 Industrial Management and Labor Relations
- BA 5116 Industrial Relations and Labor Laws
- BA 5136 Business Strategy and Policy
- BA 5152 Event Management
- BA 5172 Entrepreneurial Business Strategy
- BA 5213 Project Management
- BA 5295 Crisis Management
- BA 5334 Corporate Sustainability
- BA 5242 Lean Six Sigma Manufacturing
- BA 5434 Hospitality and Tourism Management
- BA 5333 Business Theory
- BA 5433 Business Application

# Marketing

- BA 5121 Advertising
- BA 5122 Brand Management
- BA 5123 Consumer Behavior
- BA 5124 Customer Relationship Management
- BA 5126 Export Marketing
- BA 5127 Global Marketing
- BA 5129 Services Marketing
- BA 5171 Strategic Advertising
- BA 5182 Trade Marketing
- BA 5186 Social Marketing
- BA 5199 Integrated Brand Communication
- BA 5217 Industrial Marketing
- BA 5224 Media Planning and Management
- BA 5225 Personal Selling
- BA 5226 Pharmaceutical Marketing
- BA 5227 Sales Management
- BA 5228 Retail Management
- BA 5246 Public Relations
- BA 5256 Integrated Marketing Communications
- BA 5259 Emerging Media
- BA 5264 Interactive Global and Regional Marketing
- BA 5269 Marketing Intelligence
- BA 5281 Digital Marketing

- BA 5286 Media Marketing
- BA 5293 New Product Development
- Process and Innovation
- BA 5296 Rural Marketing
- BA 5198 Experiential and Content Marketing
- BA 5299 Media Management
- BA 5141 Public Relations Management
- BA 5438 Marketing Practices in Pakistan
- BA 5331 Marketing Analytics
- BA 5339 Packaging for Brands
- BA 5337 Retail Strategy and Structure
- BA 5437 Retail Supply Chain Management
- BA 5436 Retail Operation
- BA 5336 Retail Buying and Merchandising
- BA 5451 Strategic Entrepreneurship
- BA 5355 Marketing Strategies for Emerging Economies

## Supply Chain Management (SCM)

- BA 5191 Advance Manufacturing and TPM in SCM
- BA 5194 Supply Chain Finance
- BA 5214 Supply Chain Management
- BA 5263 Dynamics of Logistics and Distribution
- BA 5265 Operational Planning in Supply Chain
- BA 5266 Strategic Procurement in SCM BA 5287 Execution and Control of Operations in SCM
- BA 5291 Detailed Scheduling and Planning in SCM
- BA 5142 Materials Management
- BA 5338 Shipping in SCM
- BA 5432 Green Supply Chain Management
- BA 5431 Supply Chain Operations
- BA 5449 Strategic Warehouse Management
- BA 5439 Green Logistics

# Non-Credit Hours Course

BA 5110 Software Tools for Business

# Internship

All MBA students are required to complete a 6-week internship. Completion of internship is a degree requirement for all MBA programs. Students can produce their current employment record as an alternative to the internship program provided such employment experience is recognized by SZABIST.







# Master of Science in Management Sciences

There are two streams available for Master of Science in Management Sciences. One Stream is by Course Work and other one is by Research Work. In Course Work Stream, the student is required to complete 10 courses of 3 credit hours each. In the Research Work Stream, the student is required to complete 8 Courses and Two IRS OR one Thesis of Six credit hours. In both the streams, 30 credit hours are to be completed. The time limit to earn an MS degree is from 1.5 to 4 years. The detail of two streams is as follows:

# 1. MS By Course Work Stream

- The Scheme of Study is as follows:
- Six Compulsory Courses
- Four Electives
- No IRS or Thesis

# **Compulsory Courses**

- MS 5137 Research Methods and Techniques
- MS 5204 Quantitative Tools for Research
- MS 5132 Applied Strategic Management
- MS 5104 Strategic Marketing Decisions
- MS 5318 Strategic Finance
- MS 5238 Strategic Human Resource Development

# Electives (Electives in any of following areas subject to the offering of Course)

- Finance
- Marketing
- Human Resource Management
- Business Analytics

# First Year

# **Fall Semester**

# MS 5137 Research Methods and Techniques

- MS 5132 Applied Strategic Management
- MS 5238 Strategic Human Resource Development
- MS 5104 Strategic Marketing Decisions

# **Spring Semester**

MS 5204Quantitative Tools for ResearchMS 5318Strategic FinanceMS 5xxxElective IMS 5xxxElective II

# Second Year

# Fall Semester

MS 5xxx Elective III MS 5xxx Elective IV

# 2. MS By Research Work Stream

- The Scheme of Study is as follows:
- Six Compulsory Courses
- Two Electives
- Two IRS OR Thesis

## **Compulsory Courses**

- MS 5137 Research Methods and Techniques
- MS 5204 Quantitative Tools for Research
- MS 5132 Applied Strategic Management
- MS 5104 Strategic Marketing Decisions
- MS 5318 Strategic Finance
- MS 5238 Strategic Human Resource Development

# Electives (Electives in any of following areas subject to the offering of Course)

- Finance
- Marketing
- Human Resource Management
- Business Analytics

## First Year

# Fall Semester

- MS 5137 Research Methods and Techniques
- MS 5132 Applied Strategic Management
- MS 5238 Strategic Human Resource Development
- MS 5104 Strategic Marketing Decisions

# **Spring Semester**

MS 5204 Quantitative Tools for Research MS 5318 Strategic Finance MS 5xxx Elective I MS 5xxx Elective II

# Second Year

# **Fall Semester** MS 5xxx IRS I and IRS II OR

MS 5xxx Thesis (Part I)

# Spring Semester

MS 5xxx Thesis (Part II)

# ELECTIVES

# Finance

- MS 5113 Financial Time Series
- MS 5103 Managerial Economics
- MS 5105 Econometrics
- MS 5111 Derivatives and Financial Risk
- MS 5115 Operations and Mathematical Modeling
- MS 5134 Behavioral Finance
- MS 5206 Modern Financial Applications
- MS 5215 Corporate Finance
- MS 5217 Corporate Finance Planning and Decisions
- MS 5218 Financial Markets
- MS 5237 Business Finance and Decision Making
- MS 5414 Applied Econometrics
- MS 5421 Capital Asset Pricing Model
- MS 5425 Empirical Asset Pricing
- MS 5317 Seminars in Finance
- MS 5426 Mathematical Modeling in Finance
- MS 5412 Islamic Banking and Finance

## Marketing

- MS 5249 Advance Marketing Strategy
- MS 5301 Seminars in Marketing
- MS 5422 Distribution and Channel Management
- MS 5424 Strategic Brand Management
- MS 5429 Marketing Metrics
- MS 5431 Strategic Entrepreneurial Marketing
- MS 5432 Strategic Social Marketing
- MS 5428 Global Marketing Strategies
- MS 5433 Advertising Research
- MS 5434 Behavioral Marketing

## Human Resource Management

- MS 5101 Change Management
- MS 5102 Organizational Development
- MS 5202 Organizational Strategies and Effectiveness
- MS 5203 Global Corporate Strategy
- MS 5205 International Business Management
- MS 5211 Creative Leadership
- MS 5216 Corporate Governance
- MS 5225 Leadership and Motivation Techniques
- MS 5229 Negotiations and Conflict Resolution
- MS 5241 Public Administration and Governance
- MS 5245 System Thinking and Organizational Learning
- MS 5303 Issues in Strategic Management
- MS 5415 NGO Management
- MS 5423 Global Governance and Development
- MS 5427 Seminars in HRM

### **Business Analytics**

- MS 5467 Tools for Data Analytics (Mandatory for Business Analytics Students)
- MS 5454 Data Mining

# • Finance

- MS 5461 Fintech/Data Science for Finance
- MS 5452 Applied Time Series Analysis for With Software Forecasting
- MS 5469 Risk Management
- MS 5459 Financial Modelling with Software

## Marketing

- MS 5456 Digital Marketing and Social Media
- MS 5468 Retailing and Analytics
- MS 5465 Market Strategy and Forecasting
- MS 5453 Customer Relations Management

## • Management/HRM

- MS 5455 Decision Support System
- MS 5464 Management Models
- MS 5457 Disaster Management (GIS)
- MS 5463 HR Analytics
- MS 5466 Performance Management

### Supply Chain Management

- MS 5471 Strategies for Managing Supply Chain
- MS 5451 Advanced Warehouse, Stores and
- Material Management
- MS 5462 Green Supply Chain Management
- MS 5458 Distribution Networks

Elective courses may vary from time to time. All courses may not necessarily be offered every year. Alternate courses may be substituted as and when required.

Students cannot register in Independent Research Study (IRS) OR thesis without completing six compulsory courses.

Maximum course load for a semester is 4 courses (12 credit hours). Summer is not a regular semester; therefore, courses are not offered on a regular basis in summer. A student can take maximum two interdisciplinary elective courses in SS/CS/IT/ Media/MBA program with the prior approval of respective program managers.
#### DEPARTMENT OF COMPUTING

The Department of Computing is aimed to produce globally recognized scientific and technological experts in the field of computing. In the recent decade the computer science has played a catalytic role for many real-world applications. This includes, but not limited to, banking, software house, education, government, commerce, security, healthcare etc. The Department of Computing at SZABIST is committed to produce quality graduated who can satisfy the national and global contemporary scientific and technological needs. The students are encouraged to render cutting edge research & development in the domain of computing to handle **socio-economic** challenges.

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#### PROGRAMS

The Department of Computing at SZABIST offers degree program both at undergraduate and graduate level. All programs being offered in the Department of Computing are fully in-line with the guidance of Higher Education Commission and in accordance with the national and global industrial needs. The programs being offered at the Department of Computing are accredited by National Computing Education Accreditation Council (NCEAC), Pakistan. The Department of Computing offers following degree programs: · Bachelors of Science in Computer Science

- · Bachelors of Science in Software Engineering
- · Masters of Science in Computer Science

#### **BS** Computer Science

The program is offered through a well-trained foreign qualified faculty. It consists of 41 courses (five/six courses per semester) with a total of 130 credit hours. BSCS Program is accredited by NCEAC. The maximum time to complete the degree is six years.

Sem.         Codes         Course Title         First Year         Pre-Req.           Fall Semester           CSC 1101         Calculus and Analytical Geometry         3, 0         3	Carro	Cadaa	Course Title		[	Dres Deer
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CSCL 2103         Lab: Digital Logic Design         0,1         1         CSCL 1107           CSC 1206         Probability and Statistics         3,0         3         3           CSC 1209         Islamic Studies/ Humanities         2,0         2         16           Second Year           Tell Semester           CSC 1201         Discrete Mathematical Structures         3,0         3         CSC 1208           CSC 1201         Data Structures and Algorithms         3,0         3         CSC 1208           CSC 2102         Data Structures and Algorithms         0,1         1         CSCL 1208           CSC 2201         Computer Organization and Assembly Language         3,0         3         CSCL 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0,1         1         CSCL 1208           CSC xxxx         University Elective-1         3,0         3            CSC 2203         Database Systems         3,0         3             CSC 2204         Finite Automata Theory and Formal Languages         3,0         3             CSC 2204         Finite Automata Theory and Formal Languages         3,0         3 <td></td> <td>CSC 2101</td> <td>Communication and Presentation Skills</td> <td>3, 0</td> <td>3</td> <td>CSC 1102</td>		CSC 2101	Communication and Presentation Skills	3, 0	3	CSC 1102
CSC 1206         Probability and Statistics         3, 0         3           CSC 1209         Islamic Studies/ Humanities         2, 0         2           I6           Second Year           Fall Semester           CSC 1201         Discrete Mathematical Structures         3, 0         3         CSC 1208           CSC 1201         Discrete Mathematical Structures         3, 0         3         CSC 1208           CSC 2102         Data Structures and Algorithms         3, 0         3         CSC 1208           CSC 2201         Computer Organization and Assembly Language         3, 0         3         CSC 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0, 1         1         CSC 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0, 1         1         I           CSC xxxx         University Elective-1         3, 0         3         I         I           CSC 2203         Database Systems         3, 0         3         I         I           CSC 2203         Database Systems         0, 1         1         CSC 2102         CSC 2204         Finite Automa		CSC 2103	Digital Logic Design	3, 0	3	CSC 1107
CSC 1209         Islamic Studies/ Humanities         2, 0         2           16           Second Year           Fall Semester           CSC 1201         Discrete Mathematical Structures         3, 0         3         CSC 1208           CSC 1202         Data Structures and Algorithms         3, 0         3         CSC 1208           CSC 2102         Lab: Data Structures and Algorithms         0, 1         1         CSC 1208           CSC 2201         Computer Organization and Assembly Language         3, 0         3         CSC 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0, 1         1         CSC 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0, 1         1         CSC 1208           CSC 2201         Lab: Computer Organization and Assembly Language         0, 1         1         CSC 2010           CSC xxxx         University Elective-1         3, 0         3		CSCL 2103	Lab: Digital Logic Design	0, 1	1	CSCL 1107
16Second YearFall SemesterCSC 1201Discrete Mathematical Structures3, 03CSC 2102Data Structures and Algorithms3, 03CSC 1208CSC 2102Lab: Data Structures and Algorithms0, 11CSCL 1208CSC 2201Computer Organization and Assembly Language3, 03CSC 2201Lab: Computer Organization and Assembly Language0, 11CSC 2201Lab: Computer Organization and Assembly Language0, 11CSC xxxxUniversity Elective-13, 03CSC 2203Database Systems3, 03CSC 2204Database Systems3, 03CSC 2102CSC 2204Finite Automata Theory and Formal Languages3, 03CSC 2206Linear Algebra3, 03CSC 2202Design and Analysis of Algorithms3, 03CSC xxxxUniversity Elective -23, 03		CSC 1206	Probability and Statistics	3, 0	3	
16Second YearFall SemesterCSC 1201Discrete Mathematical Structures3,03CSC 2102Data Structures and Algorithms3,03CSC 1208CSC 2102Lab: Data Structures and Algorithms0,11CSCL 1208CSC 2201Computer Organization and Assembly Language3,03CSC 2201Lab: Computer Organization and Assembly Language0,11CSC 2201Lab: Computer Organization and Assembly Language0,11CSC xxxxUniversity Elective-13,03CSC xxxxCS Supporting-13,03Spring SemesterCSC 2203Database Systems0,11CSC 2102CSC 2204Finite Automata Theory and Formal Languages3,03CSC 2206Linear Algebra3,03CSC 3202Design and Analysis of Algorithms3,03CSC xxxxUniversity Elective -23,03		CSC 1209	Islamic Studies / Humanities	2,0	2	
Fall SemesterCSC 1201Discrete Mathematical Structures3,03CSC 2102Data Structures and Algorithms3,03CSC 1208CSC 2102Lab: Data Structures and Algorithms0,11CSCL 1208CSC 2201Computer Organization and Assembly Language3,03CSC 2201Lab: Computer Organization and Assembly Language0,11CSC 2201Lab: Computer Organization and Assembly Language0,11CSC 2201Lab: Computer Organization and Assembly Language0,11CSC xxxxUniversity Elective-13,03CSC xxxxCS Supporting-13,03Spring SemesterIVCSC 2203Database Systems0,11CSC 2102CSC 2203Lab: Database Systems0,11CSC 2102CSC 2204Finite Automata Theory and Formal Languages3,03CSC 2206Linear Algebra3,03CSC 3202Design and Analysis of Algorithms3,03CSC xxxxUniversity Elective -23,03		1				
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CSC 2102Data Structures and Algorithms3,03CSC 1208CSCL 2102Lab: Data Structures and Algorithms0,11CSCL 1208CSC 2201Computer Organization and Assembly Language3,033CSCL 2201Lab: Computer Organization and Assembly Language0,111CSC xxxxUniversity Elective-13,0331CSC xxxxCS Supporting-13,0331Spring SemesterCSC 2203Database Systems3,03CSC 2102CSC 2204Finite Automata Theory and Formal Languages3,0331CSC 3202Design and Analysis of Algorithms3,03CSC 2102CSC xxxxUniversity Elective -23,031		CSC 1201	Discrete Mathematical Structures	3,0	3	
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CSC 2201Computer Organization and Assembly Language3,03CSCL 2201Lab: Computer Organization and Assembly Language0,11CSC xxxxUniversity Elective-13,03CSC xxxxCS Supporting-13,03ITSpring SemesterCSC 2203Database SystemsCSC 2203Lab: Database Systems0,11CSC 2204Finite Automata Theory and Formal Languages3,03CSC 2206Linear Algebra3,03CSC 2102CSC 3202Design and Analysis of Algorithms3,03CSC 2102CSC xxxxUniversity Elective -23,03		CSCL 2102			1	
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CSC xxxxUniversity Elective-13,03CSC xxxxCS Supporting-13,03ITSpring SemesterCSC 2203Database Systems3,03CSC 2102CSC 1203Lab: Database Systems0,11CSCL 2102CSC 2204Finite Automata Theory and Formal Languages3,03CSC 2102CSC 2206Linear Algebra3,03CSC 2102CSC 3202Design and Analysis of Algorithms3,03CSC 2102CSC xxxxUniversity Elective -23,03CSC 2102					1	
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17Spring SemesterCSC 2203Database Systems3, 03CSC 2102CSC 1203Lab: Database Systems0, 11CSCL 2102CSC 2204Finite Automata Theory and Formal Languages3, 033CSC 2206Linear Algebra3, 033CSC 3202Design and Analysis of Algorithms3, 03CSC 2102CSC xxxxUniversity Elective -23, 033		CSC xxxx	CS Supporting-1		3	
CSC 2203Database Systems3,03CSC 2102CSCL 2203Lab: Database Systems0,11CSCL 2102CSC 2204Finite Automata Theory and Formal Languages3,033CSC 2206Linear Algebra3,033CSC 3202Design and Analysis of Algorithms3,03CSC 2102CSC xxxxUniversity Elective -23,033		<u> </u>				- <b>I</b>
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CSCL 2203Lab: Database Systems0, 11CSCL 2102CSC 2204Finite Automata Theory and Formal Languages3, 03CSC 2206Linear Algebra3, 03CSC 3202Design and Analysis of Algorithms3, 03CSC xxxxUniversity Elective -23, 03		CSC 2203		3, 0	3	CSC 2102
CSC 2204Finite Automata Theory and Formal Languages3,03CSC 2206Linear Algebra3,03CSC 3202Design and Analysis of Algorithms3,03CSC xxxxUniversity Elective -23,03						
CSC 2206Linear Algebra3, 03CSC 3202Design and Analysis of Algorithms3, 03CSC 2102CSC xxxxUniversity Elective -23, 033			· · · · · · · · · · · · · · · · · · ·			
CSC 3202Design and Analysis of Algorithms3, 03CSC 2102CSC xxxxUniversity Elective -23, 03			, , , , , , , , , , , , , , , , , , , ,			
CSC xxxx University Elective -2 3, 0 3						CSC 2102

#### BS (Computer Science) COURSE PLAN (ROADMAP)

	Third Year			
	Fall Semester			
CSC 2205	Operating Systems	3, 0	3	CSC 2102
CSCL 2205	Lab: Operating Systems	0, 1	1	
CSC 3109	Software Engineering	3, 0	3	
CSC 3201	Compiler Construction	3, 0	3	CSC 2204
CSC xxxx	CS Supporting -2	3, 0	3	
CSC xxxx	CS Supporting-3	3, 0	3	
		16		
	Spring Semester			
CSC 1205	Technical and Business Writing	3,0	3	
CSC 3205	Computer Networks and Data Communications	3, 0	3	
CSCL 3205	Lab: Computer Networks and Data Communications	0, 1	1	
CSC 4101	Artificial Intelligence	3, 0	3	CSC120
CSCL 4101	Lab: Artificial Intelligence	0, 1	1	
CSC 4xxx	CS Elective-1	3, 0	3	
CSC 4xxx	CS Elective-2	3, 0	3	
		17		
	Fourth Year			
	Fall Semester			
CSC 4105	Final Year Project-I	0, 3	3	
CSC 4106	Parallel and Distributed Computing	3, 0	3	CSC 220
CSC 4xxx	CS Elective-3	3, 0	3	
CSC 4102	Professional Practices	3, 0	3	
CSC xxxx	University Elective-3	3, 0	3	
		15		
	Spring Semester			
CSC 4201	Information Security	3, 0	3	
CSC 4205	Final Year Project-II	0, 3	3	
CSC 4xxx	CS Elective-4	3, 0	3	
CSC 4xxx	CS Elective-5	3, 0	3	
CSC xxxx	University Elective-4	3, 0	3	
		15		

\*\*A CSC xxxx Mathematics deficiency course will be offered to those students who have limited mathematical background (if deemed necessary by relevant PM/HOD).

#### **CS ELECTIVES**

CSC 4802	Android Application Development
CSC 4703	Applied Data Mining
CSC 4803	Auditing Information Systems
CSC 4804	Business Process Re-engineering
CSC 4705	Control Systems
CSC 4805	Data and Network Security
CSC 4807	Embedded Programming
CSC 4708	Enterprise Resource Planning
CSC 4808	Ethical Hacking
CSC 4709	Internet Business Models
CSC 4809	iOS Development
CSC 4712	IT Innovations
CSC 4713	Managing Data-Center Projects
CSC 4812	Mechatronics
CSC 4813	Modeling and Simulation
CSC 4714	Network Security and Encryption
CSC 4815	Software Engineering-II
CSC 4814	Software Project Management
CSC 4716	Switching and Routing
CSC 4816	Technopreneurship
CSC 4717	Web Technologies-I
CSC 4817	Web Technologies-II
CSC 4718	Wireless and Mobile Technologies
CSC 4823	Interaction Design
CSC 4719	Game Development
CSC 4721	Introduction to Cloud Computing
CSC 4822	Software Engineering Economics
CSC 4818	Data Sciences
CSC 4824	Embedded Systems
CSC 4825	Computer Graphics
CSC 4722	Introduction to Blockchain Technology
CSC 4723	Blockchain and Smart Contract
	Development

#### UNIVERSITY ELECTIVES

Each campus may offer university electives as per convenience and availability of resources. The Electives being offered at Karachi Campus as are as follows:

CSC 4501	Business and Technology Ethics
CSC 4606	Psychology

- CSC 4605 Sociology
- CSC 4601 Foreign Languages
- CSC 4502 Design and Creativity
- CSC 4602 History of Scientific Ideas
- CSC 4503 Introduction to Accounting
- CSC 4603 Management Principles
- CSC 4504 Organizational Behavior
- CSC 4604 Research Report
- CSC 4505 Systems Administration

#### COMPUTER SCIENCE SUPPORTING COURSES

Coverage of relevant pre-requisite will be ensured while allowing any of the following courses from this category:

CSC 2122	Differential Equations
CSC 1202	Multivariate Calculus
CSC 2123	Graph Theory
CSC 2121	Theory of Programming Languages

CSC 3203 Numerical Computing

#### DISTRIBUTION OF CREDIT HOURS

Course Group		Cr. Hrs.	%
Computing	Core Courses	39	30%
	Supporting Areas	12	9%
	General Education	19	15%
Computer Science	Core Courses	24	18%
	Electives	15	12%
	Supporting Courses	9	7%
University Electives		12	9%
	Total	130	100%

#### Internship

The internship is scheduled for summer at the end of third year. After completion of the six-week internship, all students are required to submit a comprehensive report giving details of their experience and learning.



#### **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.

Sem.	Codes	Course Title	Cr.H	Irs.	Pre-Req.
		First Year			
		Semester -1 <sup>st</sup>			
	CSC 1101	Calculus and Analytical Geometry	3, 0	3	
	CSC 1102	English Composition and Comprehension	3, 0	3	-
	CSC 1103	Fundamentals of Programming	3, 0	3	-
	CSCL 1103	Lab: Fundamentals of Programming	0, 1	1	-
	CSC 1107	Applied Physics	2, 0	2	-
	CSCL 1107	Lab : Applied Physics	0, 1	1	-
	CSC 1108	Introduction to Computer Science	2, 0	2	-
	CSCL 1108	Lab: Introduction to Computer Science	0, 1	1	-
	CSC 1109	Pakistan Studies	2, 0	2	-
	Sub-total 18				
		Semester -2 <sup>nd</sup>			
	CSC 1208	Object Oriented Programming Techniques	3, 0	3	CSC 1103
	CSCL 1208	Lab: Object Oriented Programming Techniques	0, 1	1	CSC 1103
	CSC 2101	Communication and Presentation Skills	3, 0	3	CSC 1102
	CSC 3109	Software Engineering	3, 0	3	-
	CSC 1201	Discrete Mathematical Structures	3, 0	3	-
	CSC 1209	Islamic Studies/ Humanities	2, 0	2	-
	SEC xxxx	University Elective-I	3, 0	3	-
		Sub-total	18		· · · · · · · · · · · · · · · · · · ·
		Second Year			
		Semester -3 <sup>rd</sup>			
	CSC 2102	Data Structures and Algorithms	3, 0	3	CSC 1208
	CSCL 2102	Lab: Data Structures and Algorithms	0, 1	1	CSC 1208
	SEC 2403	Software Requirement Engineering	3, 0	3	CSC 3104
	SEC 2103	Human Computer Interaction	3, 0	3	CSC 3104
	CSC 2206	Linear Algebra	3, 0	3	
	SEC xxxx	University Elective-II	3, 0	3	
		Sub-total	16		

#### BS (SOFTWARE ENGINEERING) COURSE PLAN (ROADMAP)

Sem.	Codes	Course Title	Cr.H	lrs.	Pre-Req
	1	Semester -4 <sup>th</sup>			-
	CSC 2205	Operating Systems	3,0	3	CSC 210
	CSCL 2205	Lab: Operating Systems	0, 1	1	CSC 210
	CSC 2203	Database Systems	3,0	3	CSC 210
	CSCL 2203	Lab: Database Systems	0, 1	1	CSC 210
	SEC 2404	Software Design and Architecture	2,0	2	CSC 516
	SECL 2404	Lab: Software Design and Architecture	0, 1	1	CSC 516
	CSC 1206	Probability and Statistics	3,0	3	
	SEC xxxx	University Elective - III	3,0	3	
	1	Sub-total	17		
		Third Year			
		Semester -5 <sup>th</sup>			
	SEC 3604	Software Construction and Development	2,0	2	SEC XX
	SECL 3604	Lab: Software Construction and Development	0, 1	1	SEC XX
	CSC 3205	Computer Networks and Data Communication	3, 0	3	
	CSCL 3205	Lab: Computer Networks and Data Communication	0, 1	1	
	CSC 1205	Technical and Business Writing	3, 0	3	CSC 210
	SEC xxxx	SE Supporting -I	3, 0	3	
	SEC xxxx	SE Supporting -II	3, 0	3	
		Sub-total	16		
		Semester -6 <sup>th</sup>			
	SEC 3605	Software Quality Engineering	3, 0	3	CSC 310
	SEC 3617	Information Security	3, 0	3	
	CSC 4102	Professional Practices	3, 0	3	
	SEC 3607	Web Engineering	3, 0	3	
	SEC xxxx	SE Elective - I3, 0	3		
	SEC 4xxx	SE Supporting - III	3, 0	3	
		Sub-total	18		
		Fourth Year			
		Semester -7 <sup>th</sup>			
	SEC 3603	Software Project Management	3, 0	3	CSC 310
	SEC 3606	Software Re-Engineering	3,0	3	SEC XX
	SEC xxxx	SE Elective -II	3,0	3	
	SEC xxxx	SE Elective - III	3,0	3	
	CSC 4105	Final Year Project - I	0, 3	3	
	<u> </u>	Sub-total	15		
		Semester -8 <sup>th</sup>			
	SEC xxxx	SE Elective — IV	3, 0	3	
	SEC xxxx	SE Elective — V	3, 0	3	
	CSC 4205	Final Year Project — II	0, 3	3	CSC 410
	SEC xxxx	University Elective — IV	3, 0	3	
		Sub-total	12		
	1	Total		130	

\*\*A CSC xxxx Mathematics deficiency course will be offered to those students who have limited mathematical background (if deemed necessary by relevant PM/HOD).

#### **SE Electives**

SE Electiv	res
	Artificial Intelligence
SEC 4537	Parallel and Distributed Computing
SEC 4515	Digital Image Processing
SEC 4528	Game Development
SEC 4532	Introduction to Cloud Computing
SEC 4543	Systems Programming
SEC 4544	Technopreneurship
SEC 3614	Computer Graphics
SEC 4514	Introduction to Data Science
SEC 4534	Modeling and Simulation
SEC 3612	Mobile Application Development
SEC 4521	Agent Based Software Engineering
SEC 4522	0
SEC 4523	1 0
SEC 4524	Computer Vision
SEC 4526	Design Patterns
SEC 4511	
SEC 4527	Formal Methods
SEC 4531	Information Systems Audit
SEC 4533	Management Information Systems
SEC 4535	Multimedia Communication
SEC 4536	0
SEC 4538	Real Time Systems
SEC 4539	Semantic Web
SEC 4541	Software Engineering Economics
SEC 4542	
SEC 4545	Topics in Software Engineering
SEC 4518	Visual Programming
SEC 4525	Data Encryption and Security
SEC 4529	Global Software Development

#### SE Supporting courses

- SEC 4713 Digital Logic Design
- SEC 4714 Business Process Engineering
- SEC 4711 Formal Methods in Software Engineering
- SEC 4712 Operations Research
- SEC 4715 Stochastic Processes

#### UNIVERSITY ELECTIVES

- SEC 3309 Organizational Behavior
- SEC 3307 Foreign Languages
- SEC 3308 Management Principles
- SEC 3306 Sociology
- SEC 3311 Psychology
- SEC 3301 Introduction to Management
- SEC 3302 Financial Accounting
- SEC 3303 Human Resource Management

#### DISTRIBUTION OF CREDIT HOURS

Course Group		Cr. Hrs.	%
Computing	Core Courses	39	31%
Software Engineering	Core Courses	27	18%
	Electives	15	12%
	Supporting	9	7%
General Education		19	14%
University Electives		12	9%
Mathematics and Science Foundation		12	9%
Total		130	100%

#### Internship

The internship is scheduled at the end of third year. After completion of the six-week internship, all students are required to submit a comprehensive report, giving details of their experience and learning.

All courses may not be offered in every semester. Elective courses may vary from time to time. Alternative courses may be substituted as and when required.



#### MS Computer Science

SZABIST offers MSCS degree in three domains: Core Computer Science area and in two specialization tracks; i.e., Software Engineering (SE) and Networks and Security (N&S) in order to cater to the market needs. Students have 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. Although the institutional administration emphasize and encourage students to undertake research, they can take two courses in lieu of research in specific domains. 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 Studies (6 credit hours) OR one Thesis (6 credit hours).

The maximum time limit to complete the MS degree is 4 years.

#### Master of Science in Computer Science (In Core Computer Science)

#### First Year

#### **First Semester**

CSC 5105	Research Methodology
CSC 5101	Advanced Algorithms Analysis
CSC 5102	Theory of Computation

#### Second Semester

CSC 5201 Advanced Operating Systems CSC 5202 Advanced Computer Architecture CSC 5xxx Elective-I (from CS Stream)

#### Second Year

#### **Third Semester**

CSC 5xxx Thesis/Independent Research Study-I OR Course Work (from CS-Stream) CSC 5xxx Elective-III (from CS-Stream) CSC 5xxx Elective-III (from CS-Stream)

#### Fourth Semester

CSC 5xxx Thesis/Independent Research Study-II OR Course Work (from CS-Stream) CSC 5xxx Elective-IV (from CS-Stream)

#### Master of Science in Computer Science (With Specialization in Software Engineering)

#### First Year

#### **First Semester**

CSC 5105	Research Methodology
CSC 5101	Advanced Algorithms Analysis
CSC 5102	Theory of Computation

#### Second Semester

CSC 5201 Advanced Operating Systems CSC 5202 Advanced Computer Architecture SEC 5xxx Elective-I (from SE Stream)

#### Second Year

#### Third Semester

CSC/SEC 5xxx	Thesis/Independent Research
	Study I OR Course Work (from CS
	Stream or from SE-Stream)
SEC 5xxx	Elective-II (from SE-Stream)
SEC 5xxx	Elective-III (from SE-Stream)

#### **Fourth Semester**

CSC/SEC 5xxx	Thesis/Independent Research
	Study II OR Course Work (from
	CS Stream or from SE-Stream)
SEC 5xxx	Elective-IV (from SE-Stream)

Master of Science in Computer Science (With Specialization in Networks & Security)

#### First Year

#### **First Semester**

CSC 5105	Research Methodology
CSC 5101	Advanced Algorithms Analysis
CSC 5102	Theory of Computation

#### Second Semester

CSC 5201	Advanced Operating Systems
CSC 5202	Advanced Computer Architecture
NSC 5xxx	Elective-I (from N&S Stream)

#### Second Year

#### Third Semester

CSC/NSC 5xxx	Thesis/Independent Research
	Study I OR Course Work (from
	CS Stream or from
	N&S-Stream)
NSC 5xxx	Elective-II (from N&S-Stream)
NSC 5xxx	Elective-III (from N&S-Stream)

#### Fourth Semester

Thesis/Independent Research
Study II OR Course Work (from
CS Stream or from
N&S-Stream
Elective-IV (from N&S-Stream)

#### CS-Stream

CSC 5164	Real-Time Systems
CSC 5162	Digital Image Processing
CSC 5161	Machine Learning
CSC 5163	Data Mining
CSC 5166	Operation Research
CSC 5167	Deep Learning
CSC 5264	Expert Systems
CSC 5267	Reverse Engineering
CSC 5266	Digital Forensics and Malware Analysis
CSC 5263	Advanced Resource Sharing
	Architecture
CSC 5262	Computer Vision
CSC 5268	Robotics
CSC 5261	Advanced Database Design
CSC 5265	Distributed Computing
CSC 5269	Systems and Network Programming
CCC E160	Pia Data Analytica

- CSC 5168 Big Data Analytics
- CSC 5271 Natural Language Processing

#### SE-Stream

- SEC 5163 Software Requirement Engineering
- SEC 5161 Software System Architecture
- SEC 5164 Software System Quality
- SEC 5162 Advanced Software Engineering
- SEC 5261 Software Analysis and Testing
- SEC 5263 Web Engineering
- SEC 5262 Software Project Management

#### N&S-Stream

NSC 5161Advanced Computer NetworksNSC 5163Network SecurityNSC 5164Applied CryptographyNSC 5162Information SecurityNSC 5165Cyber SecurityNSC 5261Wireless Sensor NetworksNSC 5263Mobile Ad-hoc NetworksNSC 5264Advanced Data CommunicationsNSC 5265Advanced Routing and SwitchingNSC 5266Advanced Ethical Hacking

#### **Pre-Requisites:**

- For any advanced course, pre-requisite course must have been taken before.
- For each track, the following courses must have been done prior to admission.

#### MS (CS) (In Core Computer Science)

Programming Fundamental Data Structures Operating Systems Finite Automata Theory and Formal Languages

#### MS (CS) with SE-Specialization

Programming Fundamental Data Structures Operating Systems Software Engineering

#### MS (CS) with N&S-Specialization

Programming Fundamental Data Structures Operating Systems Data Communication and Computer Networks

Full time academic load is three courses. All students are required to register for full load in the first semester.

# FACULTY OF EDUCATION & SOCIAL SCIENCES

Department of Social Sciences at SZABIST aims to develop both intellectual and practical skill sets for our well-rounded students so that they shall face challenges of the 21<sup>st</sup> century and translate them into opportunities while keeping in mind social, economic and sustainable requirements of the region and beyond.

# **FACULTY OF EDUCATION & SOCIAL SCIENCES**

#### **Department of Social Sciences**

#### **BS Social Sciences**

To obtain a BS degree in Social Sciences, students are required to complete a total of 142 credit hours within 6 years. The degree consists of a total of 46 courses and a Research Project.

#### First Year

#### **Fall Semester**

- SS 1117 Computer and Web Skills
- SS 1116 English for General Purposes
- SS 1105 Microeconomics
- SS 1115 Community Services
- SS 1201 Introduction to Social Sciences
- SS 1112 Pakistan Studies

#### Spring Semester

- SS 2306 Psychology
- SS 1205 Macroeconomics
- SS 2307 Sociology
- SS 1155 Introduction to Political Science
- SS 2412 International Relations
- SS 1212 Islamic Studies OR
- SS 1213 Humanities\* (For non-Muslim students)

#### Second Year

#### Fall Semester

- SS 2314 Study of Anthropology
- SS 2316 English for Academic Purposes
- SS 2313 Introduction to Social Psychology
- SS 2318 Mathematics and Statistics
- SS 2413 Philosophy
- SS 2319 Introduction to Indus Civilization

#### **Spring Semester**

- SS 2406 Gender Studies SS 2418 Statistical Inferences
- SS 2414 Introduction to Organizational Psychology
- SS 3503 Development Studies
- SS 1209 Social Policy
- SS 1xxx Elective

#### Third Year

#### Fall Semester

SS 2312Culture, Art and SocietySS 3512Foreign Language-ISS 3606Political EconomySS 4xxxMajor-ISS 4xxxMajor-IIISS 4xxxMajor-III

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#### Spring Semester

SS 3504Research MethodsSS 3605International Law and Human RightsSS 3612Foreign Language-IISS 4xxxMajor-IVSS 4xxxMajor-VSS 4xxxMajor-VI

#### **Fourth Year**

#### Fall Semester

SS 2411Environmental StudiesSS 4707Introduction to Health PsychologySS 4709Research Project-ISS 4xxxMajor-VIISS 4xxxMajor-VIIISS 4xxxMajor-IX

#### Spring Semester

SS 4804 Public Policy SS 4809 Research Project-II SS 2405 Enlightenment SS 4xxx Major-X SS 4xxx Major-XI SS 4xxx Major-XII

#### ELECTIVES

- SS 1154 Literature
- SS 1165 Human Geography
- SS 1157 Comparative Religion
- SS 1254 World History
- SS 1262 Mass Media SS 1163 Development
- SS 1163 Development and Politics
- SS 1263 Culture and Media in Sindh
- SS 1164 History of Ideas
- SS 4075 Sindh Studies
- SS 1264 Introduction to Philanthropy

#### MAJORS

#### Psychology

- SS 4111 Abnormal Psychology
- SS 4112 Developmental Psychology
- SS 4134 Cognitive Psychology
- SS 4135 Educational Psychology
- SS 4234 Psychodynamics
- SS 4268 History of Psychology
- SS 4167 Child Psychology

### **FACULTY OF EDUCATION & SOCIAL SCIENCES**

- SS 4156 Clinical Psychology
- SS 4114 Personality Theories
- SS 4255 Counseling and Psychotherapy
- SS 4211 Psychological Testing
- SS 4236 Positive Psychology
- SS 4168 Experimental Psychology
- SS 4267 Forensic Psychology
- SS 4262 Physiological Psychology
- SS 4113 Environmental Psychology
- SS 4297 Community Psychology

#### Sociology

- SS 4269 Civil Society
- SS 4271 Peace Movements
- SS 4138 Corporate Social Responsibility
- SS 4141 Mass, Media and Society
- SS 4237 Post-Colonial State and Social Development
- SS 4238 Social Entrepreneurship
- SS 4239 Social Justice
- SS 4241 Sociology of Education
- SS 4242 The Sociology of Poverty
- SS 4196 Social Theories-I
- SS 4296 Social Theories-II
- SS 4171 Class, Caste, and Ethnicity in South Asia
- SS 4172 Political Sociology
- SS 4272 Social Change in Pakistan
- SS 4169 Citizenship
- SS 4273 Urbanization
- SS 4295 Criminology
- SS 4197 The Sociology of Religion
- SS 4198 Sociology of Health

#### **International Relations**

- SS 4275 Foreign Policy and International Politics
- SS 4274 Diplomacy, Conflict Resolution and Confidence Building Measures
- SS 4219 Peace Research
- SS 4222 Strategic Studies
- SS 4176 Globalization and Global Governance
- SS 4277 Modern Ideologies
- SS 4174 Central and West Asian Studies
- SS 4175 European Studies
- SS 4177 Middle Eastern Studies
- SS 4179 Politics of Terrorism
- SS 4178 Muslim World
- SS 4276 International Institutions
- SS 4278 Political Geography
- SS 4119 Arms Control and Disarmament
- SS 4279 US and International Politics

#### Sindh Studies

- SS 4188 Geography and Geology of Sindh
- SS 4287 History and Politics of Sindh
- SS 4288 Irrigation System of Sindh
- SS 4185 Agriculture in Sindh
- SS 4285 Archaeology of Sindh
- SS 4186 Anthropology and Culture of Sindh
- SS 4286 Art and Architecture in Sindh
- SS 4187 Ethnomusicology of Sindh
- SS 4289 Sindh's Economy and Commerce
- SS 4292 Survey of Sindhi Literature
- SS 4189 Philosophy of Sindh
- SS 4192 Sindh's Sociology-I: Education and Language Policy
- SS 4193 Sindh's Sociology-II: Social Structures and Development
- SS 4194 Sindh's Sociology-III: Health, Gender, and Feminism
- SS 4293 The Sindhi Diaspora
- SS 4291 Sindh's Geopolitical Exigencies
- SS 4191 Sindh's Botanical and Zoological Heritage

#### Economics

- SS 4139 Gender and Development
- SS 4147 Development and Planning
- SS 4181 Capabilities and Human Development
- SS 4281 Fiscal and Monetary Economics
- SS 4261 Mathematical Economics
- SS 4183 Industrial Economics
- SS 4284 Trade Economics
- SS 4128 Agriculture Economics
- SS 4182 Game Theory
- SS 4283 Labour Economics
- SS 4282 Economics Growth
- SS 4184 Poverty and Inequality
- SS 4228 History of Economic Thoughts
- SS 4249 Pakistan Economy
- SS 4251 Sustainable Development
- SS 4155 Basic Econometrics

All courses may not necessarily be offered in every year. Alternate courses may be substituted as and when required.

Full time academic load is six courses. All students are required to register for full load in the first semester.

#### Internship

The internship is scheduled for summer at the end of the third year. After the completion of the 6-week internship, all students are required to submit a comprehensive report giving details of their experience and learning.

# ACADEMIC CALENDAR 2022-23 (Hyderabad Campus)

#### ACADEMIC CALENDAR 2022-23 (Hyderabad Campus)

WEEK	COMMENTS
1	Course Registration
2	IS Thesis Advisors Meeting
3	
4	
5	Teaching Evaluation
6	Teaching Evaluation
7	
8	Mid-Term Exams
9	
10	
11	Last Week to Withdraw from Courses
12	
13	
14	
15	
16	Final Exam Week
17	Final Exam Week
	Comprehensive Exam

Classes Commencement Date

Hyderabad Campus:

29 August, 2022

# ACADEMIC CALENDAR 2022-23 (Hyderabad Campus)

#### ACADEMIC CALENDAR 2022-23 (Hyderabad Campus)

SPRING 2023	
WEEK	COMMENTS
1	Course Registration
2	
3	
4	
5	Teaching Evaluation
6	Teaching Evaluation
7	
8	Mid-Term Exams
9	
10	
11	Last Week to Withdraw from Courses
12	
13	
14	
15	
16	Final Exam Week
17	Final Exam Week
	Comprehensive Exam

**Classes Commencement Date** 

Hyderabad Campus:

16 January, 2023

### CAMPUS WISE PROGRAMS OFFERING (FALL 2022)

#### PROGRAMS OFFERING AT DIFFERENT CAMPUSES OF SZABIST (FALL 2022)

PROGRAMS	CAMPUS					
I KUGKAWIJ	Karachi Islamabad Larkana Hyderabad Du					
Bachelor of Business Administration (BBA)	<ul> <li>✓</li> </ul>					
BA (Hons.) in Business Studies (BABS)	<ul> <li>✓</li> </ul>					
BS Accounting & Finance	~					
BS (Accounting & Finance) 2.5 Years ICAP/CAF Qualified						
BS Entrepreneurship						
BS Computer Science	<ul> <li>✓</li> </ul>					
BS Artificial Intelligence	· ·	<hr/>				
BS Software Engineering						
Bachelor of Media Science	<hr/>			•		
BS Social Sciences						
BE Mechatronic Engineering	· · ·					
BS Biosciences	· ·					
BS Biotechnology	× ×					
BS Educational Psychology	~					
· · · · · · · · · · · · · · · · · · ·						
BS Public Health			~			
Bachelor of Law (LLB)						
Certificate of Higher Education in Common Law (CertHE)						
CILT (UK) Level 5 Professional Diploma in Logistic & Transport					-	
Master in Business Administration (MBA)				✓		
Executive MBA	<u> </u>					
Masters in Project Management					✓	
Professional MBA		<ul> <li>✓</li> </ul>				
Masters in Human Resource Management						
Master of Advertising	~					
MS Public Health (MSPH)	<ul> <li>✓</li> </ul>		<ul> <li>✓</li> </ul>			
MS Biosciences	<ul> <li>✓</li> </ul>					
MS Biotechnology						
MS Computer Science	<ul> <li>✓</li> </ul>			<ul> <li>✓</li> </ul>		
MS (CS) with specialization in Core Computing	<ul> <li>✓</li> </ul>					
MS (CS) with specialization in Software Engineering	~					
MS (CS) with specialization in Networks & Security	× ×	×				
MS Cyber Security		~			· ·	
Master of Media Science						
MS Management Science						
MS (Business Analytics)	<b>~</b>	· · ·	~	×		
MS (business Analytics) MS Developmental Studies						
	4	<b>~</b>				
MS Mechatronic Engineering	<b></b>					
MS Data Sciences	<u> </u>					
MS Educational Leadership and Management						
MS Project Management	<b></b>					
MS Social Sciences	<u> </u>					
MS (SS) with specialization in Economics	~					
MS (SS) with specialization in Psychology	<ul> <li>✓</li> </ul>					
MS (SS) with specialization in Clinical Psychology						
MS (SS) with specialization in Sociology	<ul> <li>✓</li> </ul>					
MS (SS) with specialization in International Relations	<ul> <li>✓</li> </ul>					
PhD Social Sciences						
PhD (SS) with specialization in Economics	<ul> <li>✓</li> </ul>					
PhD (SS) with specialization in Psychology	<ul> <li>✓</li> </ul>					
PhD (SS) with specialization in Sociology	~					
PhD (SS) with specialization in International Relations	~					
PhD Computing	<hr/>					
PhD Management Sciences	· ·	· ·				
PhD Biosciences	~	· ·		1		
PhD Educational Leadership and Management		+	+	+	+	

# We just Don't Work Hard We Work Smart

#### Disclaimer

This prospectus is only informational and should not be taken as binding on the institute. The institute, therefore, reserves the right to change any rule, regulation and guideline applicable to the program and the student whenever it is deemed appropriate or necessary, and it will be binding on all continuing and new students for all programs at all campuses.

#### SZABIST KARACHI CAMPUS

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#### SZABIST LARKANA CAMPUS

Sachal Colony, Larkana, Sindh, Pakistan Phone : 92-74-4752890-3 www.lrk.szabist.edu.pk Email: info@lrk.szabist.edu.pk





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### Shaheed Zulfikar Ali Bhutto Institute of Science & Technology