

In order to ensure that this academic program at SZABIST conforms to standards of internationally recognized universities, the curriculum has been designed with the guidance of academics and professionals specializing in Mechatronic Engineering.

First Year	Third Year
<b>Fall Semester</b> ME 1101 Communication and Presentation Skills (2, 0) ME 1102 Electric Circuits (3, 1) ME 1109 Engineering Drawing-I (0, 2) ME 1104 Engineering Mathematics-I: Calculus and Analytical Geometry (3, 0) ME 1108 Introduction to Computer System and Programming (1, 1) ME 1203 Engineering Physics (2, 1)  <b>Spring Semester</b> ME 1201 Electronic Devices and Circuits (3, 1) ME 1202 Engineering Mathematics-II: Linear Algebra and ODEs (3, 0) ME 1106 Islamic Studies (2, 0) ME 1204 Engineering Statics (3, 0) ME 2301 Computer Programming (2, 1) ME 1207 Engineering Workshop (0, 2)	<b>Fall Semester</b> ME 3501 Engineering Mathematics-V: Numerical Methods (3, 0) ME 3502 Fluid Mechanics (3, 1) ME 3503 Microprocessor and Microcontroller Based Systems (2, 1) ME 3504 Sensors, Actuators and Instrumentation (3, 1) ME 3506 Materials and Manufacturing Processes (3, 0) ME 3507 Theory of Machines (2, 1)  <b>Spring Semester</b> ME 3602 Control Systems (3, 1) ME 3603 Engineering Mathematics-VI: Probability and Statistics (3, 0) ME 3605 Power Electronics (3, 1) ME 3607 Machine Design and CAD/CAM (3, 1) ME 4705 Mechatronics System Design (3, 1) ME 1205 Technical Writing Skills (2, 0)
Second Year	Fourth Year
<b>Fall Semester</b> ME 2307 Data Structures and Object Oriented Programming (2, 1) ME 2302 Digital Logic Design (2, 1) ME 2303 Engineering Dynamics (3, 0) ME 2304 Engineering Mathematics-III: 3D Geometry and Vector Calculus (3, 0) ME 2305 Network Analysis (3, 0) ME 2306 Pakistan Studies (2, 0) ME 2309 Engineering Drawing-II (0, 1)  <b>Spring Semester</b> ME 2401 Electronics Circuit Design (3, 1) ME 2402 Electro-Mechanical Systems (3, 1) ME 2403 Engineering Mathematics-IV: Transformation Techniques (3, 0) ME 2406 Strength of Materials (3, 1) ME 2405 Thermodynamics (2, 1)	<b>Fall Semester</b> ME 4xxx Elective-I (Engineering) (3, 0) ME 4702 Engineering Economics and Project Management (3, 0) ME 4802 Robotics (3, 1) ME 4704 Mechanical Vibrations (2, 0) ME 4709 Final Year Project* (0, 3) *To be continued and graded at the conclusion of 8th Semester.  <b>Spring Semester</b> ME 4801 Industrial Automation (2, 1) ME 4xxx Elective-II (Engineering) (3, 0) ME 4xxx Elective-III (Management Sciences) (3, 0) ME 4703 Heat Transfer (2, 1) ME 4809 Final Year Project (0, 3)

### ELECTIVES

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| <b>Engineering Electives</b><br>1- Digital Signal Processing<br>2- Simulation and Modeling<br>3- Digital Image Processing<br>4- Introduction to Bio-Medical Engineering<br>5- Artificial Intelligence and Computer Vision | <b>Management Sciences Electives</b><br>1. Engineering Management<br>2- Entrepreneurship<br>3- Research Methodology<br>4- Leadership and Motivation Techniques<br>5- Organizational Behavior |
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### INTERNSHIP

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

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

## Departmental Labs

- Industrial Automation lab
- Robotics & Control lab
- Thermo Fluids lab
- Mechanics lab
- Engineering Workshop
- Design and simulation lab
- Engineering Drawing lab
- Electronics lab
- Physics lab



# Incepting New Dimensions... BE (Mechatronic Engineering)

Accredited by  
Pakistan Engineering Council (PEC)



## Mechatronics Philosophy

Mechatronics is a multidisciplinary field of engineering; it refers to an efficient and effective integration of mechanical and electronic systems.

A mechatronic engineer unites the principles of mechanics, electronics, and computing to generate a simpler, more economical, reliable and versatile system.



### Mechatronics at SZABIST

This program in Mechatronics provides a structured hands-on approach to understand microcomputer and control technology, coupled with engineering design integration applied to products. For this purpose, the department offers a program that includes various engineering science courses from the relevant fields in addition to a strong foundation in basic sciences and mathematics.

Furthermore, state-of-the-art scientific and technological research laboratories with campus licensing of wide range of commercial developmental software provides an environment unrivaled by majority of reputed universities in Pakistan.

The Chartered Inspection and Evaluation Committee (CIEC) has rated SZABIST as an **“Outstanding”** institution by awarding **“6 Stars”**. Mechatronics department has been rated as **7 Stars** i.e. **“World Class”**. Whereas, other five departments, namely Management Sciences, Computing, Social Sciences, Media Sciences and Biosciences are individually rated as 6 Stars i.e. **“Outstanding”**.

### Program Objectives

The objectives of the program are to provide a broad and basic education in multiple disciplines comprised of Mechanical, Electronics, and Computer Engineering, and to ensure that all students in the program are exposed to a wide spectrum of engineering knowledge and practice.

The goal is to educate and train engineers who are proficient in the state-of-the-art as well as emerging technologies in all key areas of the discipline. The students will acquire proficiency in engineering design and in the use of computational tools for solving engineering problems. An important objective of the program is to offer a curriculum that evolves to keep pace with the rapid growth of technology in various areas of Mechanical and Electronics engineering.

### Employment Opportunities

Graduates with a Mechatronic degree can take up careers in a wide spectrum of industries including:

- **Robotics**
- **Aerospace**
- **Chemical**
- **Defense**
- **Automotive and Manufacturing**
- **Health, Medical and many more**

As well as in businesses that requires extensive computer support, such as banking and commerce.

Contributions can be made to these industries in a variety of roles including design engineer, software engineer, project planner, product designer and project manager.



### BE (Mechatronic Engineering) Program

SZABIST offers a four year (eight semesters) BE (Mechatronic). The BE Program is essentially a day program and consists of 45 courses (generally five or six courses per semester) with a total of 140 credit hours, and an internship. The maximum time limit to complete the BE degree is seven years.

### Scholarships

SZABIST will provide a scholarship of Rs: 19,350/\$ 450 (foreign nationals) per semester (i.e. 25% of Tuition fees) to each admitted student registered for the year 2013-2014 for full load. Additionally, scholarships up to 100% of tuition fee are available to needy and meritorious continuing students.

### Admission Requirements

- The candidate must have completed intermediate (Pre Engineering)/A levels or equivalent with a combination of (Mathematics, Physics, Chemistry) with minimum 60% marks (those waiting for result can also apply).
- Candidates with DAE (Mechanical/ Electronics/Electrical/Instrumentation) having at least 60% aggregate marks from an institute recognized by the Government.
- Minimum 60% aggregate marks each in matriculation and in Intermediate/equivalent exams.
- Please note that no deviation in this regard is allowed.

Fee:	For Pakistani Nationals	Foreign Nationals
Admission Fees:	Rs. 20000	US\$ 500
Security Deposit (refundable):	Rs. 5000	US\$ 165
Student Activity Charges:	Rs. 500	US\$ 15
Tuition Fees per Course:	Rs. 13,500 (after scholarship of 15% Rs. 11,475)	US\$ 315 (after scholarship of 15% \$ 268)

**Note:** SZABIST reserves the rights to revise the fee/withdraw of scholarship without any prior notice.  
\*3 Credit Hour fee.

### Other Programs at SZABIST

SZABIST also offers the following programs; BBA, BS (Media Science), BS (Computer Science), BS (Social Sciences), BS (Biosciences), MBA, MBA (Banking & Finance), EMBA, Masters in Project Management (MPM), Master of Advertising, MS (Project Management), MS (Media Studies), MS/PhD (Management Sciences, Social Sciences, Computer Science and Education Leadership & Management) and the University of London International Programme of LLB and the BA (Hons) Business Studies (in affiliation with University of South Wales, UK). Separate brochures of these programs are available at the Admission Office.



## Admission Schedule

Last Date to Apply	: June 27, 2015
Admission Test	: June 29, 2015
Interviews	: July 2 - 3, 2015
Classes commence	: August 3, 2015

### APPLY ONLINE:

Log on to : <http://admissions.szabist.edu.pk>.  
Online applications can also be filled at SZABIST campus.

For further information please contact:

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Tel: 021-35823433 (Ext:147-148-104). Fax: 021-358 21537. [www.szabist.edu.pk](http://www.szabist.edu.pk)