Diploma In Information Technology
One Year Program

2016-2017
Commencing from 30th January, 2017

Accelerated skill enhancement program for securing jobs

www.szabist-isb.edu.pk/DIT.asp
Why DIT @ SZABIST?

1. **Vocational Degree:**
   DIT is a vocational program designed to enable graduates to secure at least a basic programmer level job in software industry.

2. **Information Technology:**
   DIT will train the students in world leading tools related to Computers and Communications Technologies which are the most essential components of IT.

3. **Industry Demand:**
   DIT is kept lean by including only the most demanded skills based courses, this ensures that we produce graduates with most needed skills by the industry.

4. **Affordable Education:**
   DIT not only reduces time but it also affects the fee since only twelve carefully chosen courses are kept in the program.
SZABIST was established with the aim of producing highly qualified, scientific and technical personnel to meet the country’s requirements of providing hi-tech scientific and technological assistance to the Pakistan industry to enable it to compete with the world industries in global perspective.

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- Open Source Market
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- Highly Qualified Graduates
We are in the information age, where everything we do is heavily dominated by computers. Everything from keeping time to communicating with each other is now dominated by technology. Information Industry is very different from others and requires very small investment to be a technologist. The most desired skills is to have an analytical & problem solving aptitude that differentiates an IT professional from others. To become successful in modern IT world, one has to develop skills on the most highly demanded technologies. The modern IT world has also gifted us with right tools and technologies that makes it far more easier than ever to develop these highly demanded skills. In essence, it is the most gifted time for anyone who chooses to become an IT professional. You can prepare yourself in much lesser time than your elders and this will also help you in securing technical jobs easier in the IT industry.

ZABIST’s DIT is one such effort that not only enables you to reduce the time it takes to understand Information Technology but also increases your chances of securing a suitable position in software industry. The program is designed to benefit most out of the new technologies and its amalgamation with hands-on learning is what that differentiates teaching DIT at SZABIST from others institutes.

As a youth, let’s take a minute to see where do we stand globally in Information Technology Arena.

The global IT industry has reached $3.8 Trillion in 2015. Pakistan is the world sixth most populous country but yet the size of its IT industry is just $2 billion. The size of India’s IT industry in 2015 was $118 billion with 23.72% growth from 2014. A small example to understand its assertiveness in the region and in world politics. The only reason, why it’s possible for India to sustain this huge growth is the simultaneous increase in the number of graduates produced each year. India experienced a 9.4% growth in the previous year and its talent force has reached 5.8 million in 2015.

It’s time for us to decide as a nation, whether we would want to succumb to this fierce competition or survive it by preparing a workforce of highly skillful graduates that can challenge any other nation’s talent on the world stage. Government of Pakistan through its vision 2025 envisions the IT industry size to increase to 10 billion in next 10 years. Education is the only way forward to achieve this goal. Pakistan Software Houses Association (P@SHA) has outlined the key skills that our graduates are deficient in. P@SHA even recommends a professional diploma for every graduate leaving the educational institution for job in Industry, DIT is one such option available to us now.
Open Source Market

The significance of open source is yet to be understood in Pakistan, especially among those who are new in adopting IT as their profession. Open Source simply means software whose design is freely available and can be understood and if any change required can also be made in it. Let’s not get into making the changes and only consider using it for your own commercial purposes! One is allowed to do it freely without any restrictions. In closed source, you have to pay a fee to use it for your business. Linux is an example of Open Source whereas Windows and Adobe are examples of famous Closed Source products. Every IT entrepreneur has to decide this at least once as whether to use open or closed source platforms. If you have seen the movie “The Social Network” you may have noticed what Mark Zuckerberg used for developing “The Facebook”? Yes, open source products.

Linux and other open source products are well understood and are used in abundance in US and Europe, in fact the use of Windows is limited there.

S ZABIST recognising the potential of open source technologies has designed its DIT program around most popular softwares used in the industry.

Java language is currently a defacto choice at all the higher academic institutes world wide. The language is included in almost every top university’s curriculum since it is most widely used in industry. Pakistan’s telecom sector is a big beneficiary of both Java and Linux and hence they need graduates proficient in both technologies.

Most of the IT Industry’s revenue in Pakistan is generated by offshore mode of business. Most of the projects being developed in Pakistan are needed and implemented abroad. Almost all of these offshore businesses use Open Source software for their development and hence are mostly looking for graduates skilled in these technologies.

D IT is envisioned to produce graduates that will fill this gap in Pakistan’s IT Industry.

According to latest research conducted across US and Canada, 83% of the employers claim the shortage of “software development professionals”. Another research conducted by European Commission in 2014 has warned the shortage of coding ability in Europe which may lead to an aggregate deficit of 9,00,000 IT professionals by 2020. It seems odd, but is true for the most populous continent — Asia. With growing economies like China, a survey revealed a more acute shortage of qualified staff in IT industry. The problem there results due to shortage of graduates produced every year and since economy is growing faster than others, China will need more qualified IT professional in coming years.

Affordability is a big factor

This remain a fact that very small percentage of youth in Pakistan are able to get higher education as they cannot afford heavy fees of Bachelors and Masters degrees. Affordability makes a big difference as one out of every 33 makes up to college education, this becomes even worse for higher education where the same ratio is one out of 180 people. Diplomas or vocational educational provides a quick and easy solution to the above problem. SZABIST has thus launched DIT to give low income people an affordable option to get a vocational degree in order to easily secure jobs in the industry.
## Course Plan

### SEMESTER-I

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Cr. Hrs.</th>
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</thead>
<tbody>
<tr>
<td>1. Information &amp; Communication Technology (ICT)</td>
<td>2+1</td>
</tr>
<tr>
<td>2. Java Programming &amp; Data Structure</td>
<td>2+1</td>
</tr>
<tr>
<td>3. Introduction to Database &amp; SQL</td>
<td>2+1</td>
</tr>
<tr>
<td>4. Operating System</td>
<td>2+1</td>
</tr>
</tbody>
</table>

### SEMESTER-II

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Cr. Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Networking with Wireless Networks</td>
<td>2+1</td>
</tr>
<tr>
<td>2. E-Commerce &amp; Web Designing</td>
<td>2+1</td>
</tr>
<tr>
<td>3. Web Development using JSP</td>
<td>2+1</td>
</tr>
<tr>
<td>4. Android Application Development</td>
<td>2+1</td>
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</tbody>
</table>

### SEMESTER-III

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Cr. Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Core Hardware &amp; PC Maintenance</td>
<td>2+1</td>
</tr>
<tr>
<td>2. Graphic Design</td>
<td>2+1</td>
</tr>
<tr>
<td>3. Office Automation (Word / Excel / Power Point)</td>
<td>2+1</td>
</tr>
<tr>
<td>4. Project</td>
<td>2+1</td>
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</tbody>
</table>

Software industry is currently thriving worldwide but academia is not able to produce enough graduates. DIT is designed for the primary purpose of producing more IT professionals in lesser duration with more hands-on expertise on leading software development tools and technologies thus increasing their prospects of getting hired.

N.B. Each Lab Hour is equivalent to two contact hours.
**Structure and Module Outlines**

**Information & Communication Technology (ICT)**

This course provides an overview of computing and computer science, including such topics as the history of computers, computer application, and basic understanding of various hardware components. This course is aimed (a) to build a critical awareness of a range of commercially available ICT tools and equipment (b) to develop familiarity with search and evaluation skills for Internet-based resources (c) to learn how to use current ICT tools for WebQuests, blogs, RSS feeds, chat (voice, video and text), podcasting, wikis, social bookmarking, online reference tools and electronic portfolios.

**Office Automation (Word / Excel / Power Point)**

Three most important softwares produced by Microsoft are WORD, Excel & Powerpoint have now become the world standard tools and are being extensively everywhere. Most of the people are still unaware of various features. This course will enable students to acquire in-depth knowledge of these tools.

**Java Programming & Data Structure**

In this introductory course, students will learn and practice essential computer science concepts using the Java programming language. They will learn about Object Oriented Programming, a technique that allows to use code written by other programmers in their own programs. The students will put their new Java programming skills to the test by solving real-world problems. In addition, the students will be able to compete for OCA (Oracle Certified Associate).

**Operating System**

Operating system (OS) is the most essential part in any computer system. It provides an interface between the user and computer hardware. The objective of this course is to provide understanding of Desktop OS and Server OS; Understanding the role of OS in computing environment, Windows & Linux Operating systems, Networking Features in the Operating System. This course will equip the students with basic knowledge to get “Linux” certification.

**Core Hardware & PC Maintenance**

Whether it’s for work or play, most of us use computers in our everyday lives. Knowing how to maintain your computer is a valuable skill. The process of studying computer maintenance might even prepare you for a career wherein you work with computers. Trouble shooting is a challenging job, several times it is difficult to decide whether the problem to the computer is caused due to hardware or software malfunctioning. This course is aimed to teach how to carryout trouble shooting and preventive maintenance. This course will enable the students to get “A+” certification.

**E-Commerce & Web Designing**

This course provides an in-depth coverage of developing and launching e-commerce based web applications. The course delves deeper in discussing todays modern client side (Java Script) based frameworks such as Angular JS, JQuery etc. It will highlight the challenges faced by the client-end developers and how the above frameworks remedy developers in such situations.
main() {
    printf("hello, world");
}

Networking with Wireless Networks

Networking is the core of ICT. This course is aimed to provide understanding of the basic concepts of computer networks and different types of such networks, understanding the different types of communication, configuring different network devices, creating different network scenarios, enable to understand the communication between applications on different computers and through different transmission media. This course will equip the students with the basic knowledge to get “A+” certification.

Introduction to Database & SQL

This course is one of the core courses, without which IT-related programs are considered incomplete. In this course we will cover what a database is and what are the basic structures that make up a database. Students will also learn about how to talk to a database using a special language called Structured Query Language (SQL). This course will equip the students with the basic knowledge to get “MySQL” certification.

Graphic Design

Graphic designing through computers has become an essential component in IT. Computer Graphics is the illustration field of Computer Science. Its use today spans virtually in all scientific fields and is utilized for design, presentation, education and training. Computer Graphics and its derivative, visualization, have become the primary tools by which the flood of information from Computational Science is analyzed. This course is aimed to develop some basic skills through Photoshop and other packages.

Web Development using JSP

The course is aimed to learn the design, development and deployment of web applications using core Java technologies, the fundamentals of Java server side web development and understand those issues and approaches associated with these technologies. The course includes how to Integrate web applications with the database, how to provide security to web applications, how to create view components using JSP (Java Server Pages).

Android Application Development

Smart phones and tablets are used by millions of people, especially the youngsters, these days. To develop any application on smart phone, the students need to understand the “Android” environment. People who got skills in developing Android applications are highly paid. This course is therefore aimed for the beginners to teach, how to build your own Android apps, explain the differences between Android and other mobile development environments, understand how Android applications work, their life cycle, manifest, intents, and using external resources.

PROJECT

Project work is essential for the students to demonstrate their understanding of the courses they had taken. Project will be assigned by the instructor which should justify the level of difficulty. Every student will have to do a separate project. No group of students will be allowed. The project is expected to be based on Web-Development or Web Designing Applications or Android Application Development or any other IT-Area.
How to apply and Fee Details

Grading Policy

<table>
<thead>
<tr>
<th>Marks Range</th>
<th>Letter Grade</th>
<th>GPA</th>
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<tbody>
<tr>
<td>95 - 100</td>
<td>A+</td>
<td>4.00</td>
</tr>
<tr>
<td>91 - 94</td>
<td>A</td>
<td>3.75</td>
</tr>
<tr>
<td>87 - 90</td>
<td>A-</td>
<td>3.50</td>
</tr>
<tr>
<td>83 - 86</td>
<td>B+</td>
<td>3.25</td>
</tr>
<tr>
<td>79 - 82</td>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>75 - 78</td>
<td>B-</td>
<td>2.75</td>
</tr>
<tr>
<td>72 - 74</td>
<td>C+</td>
<td>2.50</td>
</tr>
<tr>
<td>69 - 71</td>
<td>C</td>
<td>2.25</td>
</tr>
<tr>
<td>66 - 68</td>
<td>C-</td>
<td>2.00</td>
</tr>
<tr>
<td>64 - 65</td>
<td>D+</td>
<td>1.75</td>
</tr>
<tr>
<td>62 - 63</td>
<td>D</td>
<td>1.50</td>
</tr>
<tr>
<td>60 - 61</td>
<td>D-</td>
<td>1.25</td>
</tr>
<tr>
<td>0 - 60</td>
<td>F</td>
<td>0</td>
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</tbody>
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Eligibility

Intermediate (Pass) or A-Level Result awaiting can also apply.

Certificate Course Eligibility:

Any one can take a certificate course for their personal development.

Duration

One Year (Three Semesters) Total 36 Cr. Hrs.

Transfer of Credits

Maximum two courses, completed at other recognized institution are transferrable to this program, subject to the following conditions:

(A) 80% course contents have been covered under the course(s) applied for TOC;

(B) Course(s) has/have been passed at least with B grades or 70%, which ever is higher;

Fee Details

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<tr>
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<tbody>
<tr>
<td>Admission Fee</td>
<td>Rs 5000/-</td>
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<tr>
<td>Security</td>
<td>Rs 2000/-</td>
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<tr>
<td>Per Course Fee</td>
<td>Rs 7000/-</td>
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<tr>
<td>Per Semester</td>
<td>Rs 28000/-</td>
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</table>

(4 Courses Per Semester)

Class Timings

Class timings are flexible and will be decided in consent with the registered students.
Highly Qualified Graduates

SZABIST has produced highly qualified graduates working in renowned software houses as below:

Abdul Wahab Chaudhry
Currently working as Data Integration Specialist at Souq.com. Souq is like Amazon of UAE. Prior to working at Souq, he was responsible for developing two mobile/server side applications for Winning Solutions. These apps are in use by multi-national companies like Unilever and P&G Pakistan. Abdul Wahab has no master degree yet.

Asad Malik
Asad Malik came to SZABIST Islamabad from Shukar, Sindh. His career started with internship at Cogilent Solutions and was offered full time position after completion of his degree. He then went back to Shukar and continued working as freelance developer. He also developed products for local businesses in Shukar. He is a passionate developer who works on freelance basis for various multi-national clients.

Hasham Rasheed
Hasham completed his Bachelors degree in 2013 and is among the few students who have established their mettle very early in software industry. Hasham is currently working as an offshore Java Developer in a U.S. based company Stella Technologies Inc. Hasham experiences difficulty in choosing his next position as he is selected everywhere he applies, he got offers from middle-east and Japan but he chose to work for a U.S. based firm. Hasham has yet to attend his convocation at SZABIST.

Hassan Sabit
Hassan Sabit is currently working as Team Lead Information Security at Unique HealthCare. Like Amer Rehman his career started with a course in Ethical Hacking and he feels he owes a lot more to SZABIST for mentoring him into an information security professional.

Danish Fayyaz
Danish graduated in 2013 and have switched 4 employers in last two years. The reason he explains is abundance of jobs as he finds one better then other. Currently he is working for Interactive group of companies as Big Data developer. Danish has versatile expense being a full stack developer to work on all three platforms i.e. mobile web and desktop. Danish has plans of starting his company as he thinks developing his own product is a better option than working for other employers.

Amer Rehman
Amer joined SZABIST in 2009 and is currently working as an Information Security professional at Mobilink Headquarter. He was passionate towards learning advanced security protocols and after attending one course of Ethical Hacking & Penetration Testing decided his career will be in computer security field. He now thinks that his decision of joining SZABIST was the best decision he took in 2009 and looks forward to explore new frontiers in information security field.
DIT is a vocational program designed to enable graduates to secure at least, a basic programmer level job in the software industry. DIT will train the students in world leading tools related to Computers and Communications technologies which are the most essential components of “Information Technology”. The program is designed to cover the “Breadth” and as well as the “Depth” in certain courses, so as to prepare the students for the current growing ICT market.
Mr. Zubair Ahmed
Specialization: Programming
12 Years of Industry/Teaching Experience

Mr. Arshad Beg
Specialization: Computer Engineering
8 Years of Industry/Teaching Experience

Mr. Gulraiz Chauhdary
Specialization: Programming
8 Years of Teaching/Project Management Experience

Mr. Muhammad Sajid Iqbal
Specialization: Computer Networks
6 Years of Industry/Teaching Experience

Mr. Muneeb Mirza
Specialization: Computer Networks
6 Years of Experience in Networks