SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Karachi Campus

Spring 2016

Table of Contents

Executive Summary	I
Program Team Report	II
Program Self-Assessment Checklist	III
Assessment Team Report	IV
Program Team Registration Forms	V
Assessment Team Registration Forms	VI

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SZABIST

SELF-ASSESSMENT REPORT

Executive Summary

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

Quality Enhancement Cell
Institutional Research Department

Self-Assessment Report
Executive Summary

BS- Biosciences Program

SZABIST Karachi Campus

Introductions

SZABIST - Quality Enhancement Cell (QEC) since its inception has been active in promoting its core function of bringing standardization to ***SZABIST***'s academic programs in line with the guidelines enunciated by the Higher Education Commission. In this regard, till Spring 2016, majority (58 of 62) programs offered at ***SZABIST*** were selected for Self-Assessment process.

QEC conducted a number of workshops to create awareness of the Self-Assessment process and its significance in further improving the quality of education at ***SZABIST***. In Karachi Campus, after completing the Self-Assessment Reports of two programs in the Computing Department, five programs in the Management Sciences Department, two programs in the Social Sciences Department, one program in Mechatronics Department, one program in Media Sciences Department and the QEC initiated the Self-Assessment process of BS-Biosciences program. The highlights of the process were as follows:

1. Nomination of Program Team (PT)

The PT was nominated by the Head of Biosciences Sciences Department, Dr. Kashif Ali on March 18th, 2016. Following were the members of the PT:

(i) Ms. Asma Bashir
(ii) Ms. Farah Ashraf

2. Submission of PT Report

The PT submitted the report on April 11th, 2016. The QEC examined the report, identified shortcomings and communicated the same to the PT. After incorporating QEC suggestions, the report was finalized on May 25th, 2016.

3. Nomination of Assessment Team (AT)

The AT was nominated by the Head of IR/QEC, Dr. Muhammad Altaf Mukati and Ms. Faryal Shahabuddin on May 30th, 2016. Following were the members of the AT:

(i) Dr. Sarosh Salman (Biosciences)
(ii) Mr. Zubair Shah (Management Sciences)
(iii) Ms. Tanzila Younas (Mechatronics)

4. Date of Submission of AT Report

The AT Report was submitted on June 20th, 2016.

5. AT Findings and Recommendations

Following are the recommendations made by the AT to overcome the major shortcomings in the program:

(i) Every faculty is teaching 4 different courses thus considering factors like expertise and command on subject the quality of education being provided is compromised. It is recommended that the number of faculty members in the department should be increased.

(ii) Some of the Lab equipment are not regularly updated based on the evolving nature of Biological Sciences field. It is suggested that the Labs should be updated and the budget for lab development should be increased.

(iii) The admission promotion campaign is found to be weak. It is suggested that the admission promotion should be strengthen.

(iv) The program relevant books in library are insufficient. It is recommended that the number of library books be significantly amplified.

6. Preparation of Assessment Results Implementation Plan Summary

The AT prepared the Assessment Results Implementation Plan Summary by highlighting the weaknesses of the program and suggesting remedial measures. The Biosciences Sciences Department plans to implement the suggested corrective measures in the near future to improve the quality of education delivered at ***SZABIST***.

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INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Program Team Report

Spring 2016

Table of Contents

Criterion 1: Program Mission, Objectives and Outcomes 1
Criterion 1 - Program Mission, Objectives, and Outcomes 2
Standard 1-1 Program Measurable Objectives 2
a. Mission Statements 2
b. Program Objectives 3
c. Program Outcomes 3
d. Describe how each objective is aligned with program, college, and institution mission statements. 4
e. Outline the main elements of the strategic plan to achieve the program mission and objectives. 4
f. Program Objective Assessment 6
Standard 1-2 Program Outcomes 8
a. Outcomes versus Objectives 8
b. Employer's Survey 9
c. Alumni Survey 9
d. Graduating Students' Survey 10
Standard 1-3 Assessment Results and Improvement Plans 10
a. Describe the action taken based on the periodic assessments 10
b. Describe major future program improvement plans based on recent assessments 11
c. List strengths and weaknesses of the program 12
d. List significant future plans for the program 12
Standard 1-4 Overall Performance Using Quantifiable Measures 13
a. Indicate the GPA of Successful students per semester, time required to complete the program, drop out ratio of students per semester (of the last 3 years) 13
b. Indicate the percentage of employers that are strongly satisfied with the performance of the department's graduate. 14
c. Percentage of Student Evaluation/Assessment results for all the courses and faculty. . 14
d. List of research activities i.e. journal publications, funded projects, conference publications per faculty and per year, and the faculty awarded excellence in research. 15
e. Number of short courses workshops, seminars organized on community service level. 17
f. Faculty and student surveys results to measure the administrative services provided... 18
Criterion 2: Curriculum Design and Organization 19
Criterion 2 – Curriculum Design and Organization 20

Standard 2-1 Courses versus objectives 20
a. Title of Degree Program 20
b. Definition of Credit Hour 20
c. Degree Plan 21
d. Curriculum Course Requirement 24
e. Describe how the program content (courses) meets the program Objectives 28
f. Courses versus Outcomes, List the courses and tick against relevant outcomes 31
Standard 2-2 Theory, Problem Analysis/Solution and Design in Program 33
a. Table 4.5 Standards 2-2 requirements 33
Standard 2-3 Basic Sciences Requirements 34
Standard 2-4 Major Requirements as Specified by Accreditation Body 36
Standard 2-5 Humanities, Social Sciences, Arts, Ethical, Professional & Other Requirements 37
a. List the courses required by the Accreditation Body 37
Standard 2-6 Information Technology Content Integration throughout the Program 37
a. List the courses required by the Accreditation Body 37
Standard 2-7 Communication Skills (Oral & Written) 38
a. List the courses required by the Accreditation Body 38
b. Describe how they are applied in the program. 38
Criterion 3: Laboratories and Computing Facilities 39
Criterion 3 – Laboratories and Computing Facilities 40
Standard 3-1 lab Manual / Documentation / Instructions 47
a. Explain how students and faculty have adequate and timely access to the manuals/documentation and instructions 47
b. Are the resources available sufficient for the program 47
Standard 3-2 Adequate Support Personnel for Labs 47
Indicate for each laboratory, support personnel, level of support, nature and extent of instructional support. 47
Standard 3-3 Adequate Computing Infrastructure and facilities 48
a. Describe how the computing facilities support the computing component of your program. 48
b. Are there any shortcomings in the computing infrastructure and facilities? 49
Criterion 4: Student Support and Advising 50
Criterion 4 – Student Support and Advising 51
Standard 4-1 Sufficient Frequency of Course Offering 51

a. Provide the department's strategy for course offering. 51
b. Explain how often core courses are offered 51
c. Explain how often elective courses are offered. 51
d. Explain how required courses outside the department are managed to be offered in sufficient number and frequency. 51
Standard 4-2 Effective Faculty / Student Interaction 52
Describe how you achieve effective student/faculty interaction in courses taught by more than one person such as two faculty members, a faculty member, and a teaching assistant or a lecturer. 52
Standard 4-3 Professional Advising and Counseling 52
a. Describe how students are informed about program requirements. 52
b. Describe the advising system and indicate how its effectiveness is measured. 52
c. Describe the student counseling system and how students get professional counseling; when necessary 52
d. Indicate if students have access to professional counseling; when necessary. 53
e. Describe opportunities available for students to interact with practitioners, and to have membership in technical and professional societies 53
Criterion 5: Process Control 54
Criterion 5 – Process Control 55
Standard 5-1 Admission Process 55
a. Describe the program admission criteria 55
b. Flow Chart of Admission Process 55
c. Describe policy regarding program / credit transfer 57
d. Indicate how frequently the admission criteria are evaluated and if the evaluated results are used to improve the process. 57
Standard 5-2 registration and Students 57
a. Describe how students are registered in the program. 57
b. Describe how students' academic progress is monitored and how their program of study is verified to adhere to the degree requirements. 59
c. Indicate how frequently the process of registration and monitoring are evaluated and if the evaluation results are used to improve the process. 60
Standard 5-3 Faculty Recruitment and Retention Process 60
a. Describe the process used to ensure that highly qualified faculty is recruited to the program 60
b. Flow Chart of Faculty Recruitment Process 61
Figure 5.2 shows flow chart, that enlists details of faculty recruitment process: 61

c. Indicate methods used to retain excellent faculty members. 62
d. Indicate how evaluation and promotion processes are in line with institution mission statement 62
e. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process 63
Standard 5-4 Effective Teaching and Learning Process 63
a. Describe the process and procedures used to ensure that teaching and delivery of course material is effective and focus on students learning 63
b. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process 65
Standard 5-5 Program Requirements Completion Process 65
a. Describe the procedure used to ensure that graduates meet the program requirements 65
b. Describe when this procedure is evaluated and whether the results of this evaluation are used to improve the process 66
Criterion 6: Faculty 67
Criterion 6 – Faculty 68
Standard 6-1 Program Faculty Qualification and Number 68
a. Faculty resumes in accordance with the format 68
b. Faculty distribution by program's areas 68
Standard 6-2 Current Faculty Scholarly Activities & Development 69
a. Describe the criteria for faculty to be deemed current in the discipline and based on these criteria and information in the faculty member's resumes, what percentage of them is current. The criteria should be developed by the department. 69
b. Describe the means for ensuring that full-time faculty members have sufficient time for scholarly and professional development. 71
c. Describe existing faculty development programs at the departmental and university level. Demonstrate their effectiveness in achieving faculty development. 71
d. Indicate how frequently faculty programs are evaluated and if the evaluation results are used for improvement. 71
Standard 6-3 Faculty Motivation and Job Satisfaction 72
a. Describe programs and processes in place for faculty motivation. 72
b. Indicate how effective these programs are 72
c. Obtain faculty input using faculty survey on programs for faculty motivation and job satisfaction. 73
Criterion 7: Institutional Facilities 74
Criterion 7 – Institutional Facilities 75

Standard 7-1 New Trends in Learning 75
a. Describe infrastructure and facilities that support new trends in learning. 75
b. Indicate how adequate the facilities are 75
Standard 7-2 Library Collection & Staff 76
a. Describe the adequacy of library's technical collection. 76
b. Describe the support rendered by the library 77
Standard 7-3 Classrooms & Offices Adequacy 78
a. Describe the adequacy of the classrooms 78
b. Describe the adequacy of faculty offices. 78
Criterion 8: Institutional Support 79
Criterion 8 – Institutional Support 80
Standard 8-1 Support and Financial Resources 80
a. Describe how your program meets this standard. 80
b. Describe the level of adequacy of secretarial support, technical staff and office equipment. 80
Standard 8-2 Number and Quality of GSs, RAs, Ph.D. Students 80
a. Provide the number of graduate students for the last three years 80
b. Provide the faculty graduate student ratio 81
Standard 8-3 Financial Support for Library and Computing Facilities 81
a. Describe the resources available for the library 81
b. Describe the resources available for laboratories 82
c. Describe the resources available for computing facilities. 90
ANNEXURE 91
Sources of Information 91

CRITERION 1: PROGRAM MISSION, OBJECTIVES AND OUTCOMES

Standard 1-1	Program Measurable Objectives
Standard 1-2	Program Outcomes
Standard 1-3	Assessment Results and Improvement Plans
Standard 1- 4	Overall Performance Using Quantifiable Measures

Criterion 1 - Program Mission, Objectives, and Outcomes

Standard 1-1 Program Measurable Objectives[1]

a. Mission Statements

Mission Statement of SZABIST

• Vision Statement revised for 2016 onwards

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

• Mission Statement revised for 2016 onwards

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.

Mission Statement of Biosciences Department

Our goal is to prepare graduates for successful biological sciences professional careers and leadership roles with lifelong learning and ethical conduct that will lead them to be engaged good citizens and professionals in their community and the world.

Mission Statement of BS (Biosciences) Program

The BS (Biosciences) Program has the primary mission of providing a high-quality undergraduate education with:

i. A curriculum that evolves to keep pace with the rapid growth of technology in various areas of biological sciences.

ii. A faculty that provides teaching and mentoring both in and out of the classroom.

iii. Class sizes that encourage student participation.

iv. Project experiences that build on fundamentals and develop team skills.

v. Facilities and equipment that is readily available.

The faculty is committed to offer a broad undergraduate experience that will promote professional growth and prepare students for a variety of biological careers, graduate studies, and continuing education.

[1] The source of information is Program Manager and Head of Department.

b. Program Objectives[2]

Upon completion of their degree, the SZABIST BS (Biosciences) graduates will:

1. Have a strong foundation in science and focus in health, agriculture, genomics, biotechnology, environmental sciences etc.
2. Be able to Design and conduct experiments to study the biological systems and analyze and interpret data and generate clear conclusions.
3. Be able to demonstrate professional interaction and communicate effectively with team members.
4. Be able to work efficiently in multidisciplinary teams.
5. Be prepared for a variety of biological careers, graduate studies, and continuing education.
6. Practice professional and ethical responsibility, and, be aware of the impact of their designs on human-kind and the environment.

c. Program Outcomes[3]

Biosciences graduates will be able to:

1. An in-depth knowledge of the various basic and applied fields of Biosciences.
2. An expertise of modern Biosciences equipment, tools and techniques.
3. Design and conduct experiments to study the biological systems.
4. Analyze and interpret data and generate clear conclusions.
5. Communicate the results and findings convincingly in all forms of communication.
6. Identify healthcare and agriculture-related problems and provide solutions.
7. Learn, share, and encourage new ideas of research and development.
8. Pave the way for research in the areas pertinent to the progress of Biosciences industry as well as education in Pakistan.
9. Demonstrate ethics related to Biosciences research and/or other task in professional environment.
10. Work as an efficient member of a multidisciplinary team as well as an effective leader to lead and hold the team.
11. Play their part to develop a more advance, cultured, educated, and healthy society.

[2] The sources of information are Program Manager and Head of Department.
[3] The sources of information are Program Manager and Head of Department.

d. Describe how each objective is aligned with program, college, and institution mission statements.

Program Objectives	Alignment with program and institution mission statements
Have a strong foundation in science and focus in health, agriculture, genomics, biotechnology, environmental sciences etc.	Producing highly qualified, scientific and technical personnel to meet the country's requirements; of conducting state-of-the-art scientific and technological research and development in support of the private and public sector; of providing hi-tech scientific and technological assistance to the Pakistan industry to enable it to compete with the world industries in global trading.
Be able to Design and conduct experiments to study the biological systems and analyze and interpret data and generate clear conclusions.	
Be able to demonstrate professional interaction and communicate effectively with team members.	Prepare graduates for successful biological sciences professional careers and leadership roles with lifelong learning and ethical conduct that will lead them to be engaged good citizens, scientist, and professionals in their community and the world.
Be able to work efficiently in multidisciplinary teams.	
Be prepared for a variety of biological careers, graduate studies, and continuing education.	
Practice professional and ethical responsibility, and, be aware of the impact of their designs on human-kind and the environment.	Providing a sound scientific base and infrastructure to Pakistan to be able to meet the economic and technological challenges of the 21st century.

Table 1.1: Objective Alignment

e. Outline the main elements of the strategic plan to achieve the program mission and objectives.

Our academic strategic plan is based on our mission to be a student-centered department that prepares broadly educated, technologically proficient and highly productive citizens.

1. **An Integrated Academic Experience**

   - An integrated academic environment *fosters* connections among disciplines, between faculty and students, and with campus and community.

- Such an integrated experience is rich in *opportunities* for exploration, discovery and learning.
- It *provides* diverse perspectives, and it *prepares* students to be thoughtful competent citizens able to contribute to the common good.
- We *achieve* this goal through ongoing collaborative efforts that involve administration, faculty, students and staff.

2. **Diverse Curriculum**

- Keeping in mind that a well-designed academic curriculum needs not only to be comprehensive and effective but also *flexible*.
- Therefore, as new technology emerges and demands of the field evolve, the *curriculum is revised* without losing its commitment to quality.
- For this purpose, taking into account HEC guidelines, a wide *range of core and electives subjects* are offered to ensure that the curriculum is *responsive* to new techniques and methodologies evolving in the field of Biosciences.

3. **Research and Development**

- Student research, especially which is connected to real world concerns, not only enhances critical thinking and analytical skills for students, it also enriches research scholarship and benefits the country.
- Biosciences Department engage students as researchers by integrating research opportunities into the curriculum (particularly through *lab projects* and *internship-based* learning opportunities), by providing training for undergraduate students in research methodology and responsible research conduct, and by involving undergraduate students in multi-disciplinary research carried out at SZABIST, such as *Plant tissue culture, enzyme isolation, etc*.

4. SZABIST also aid student research by providing student travel grants to present their work at conferences/workshop/symposium/competitions.

5. **Professional Career building**

- *Executive Development Center* (EDC) facilitates arranging Internships for all students and acts as a liaison between the industry and the students.
- Every semester, renowned national and multinational companies contact the EDC to conduct their *employment tests, interviews* and other on-campus recruitment activities to directly induct SZABIST graduates into their organizations.

- Additionally, at least once a year, a '*Job Fair*' is held at campus where many leading companies are invited to explain their recruitment procedures and the scenario about present and future vacancies.
- A *graduate directory* is published, once a year. It is a compendium which gives CVs of all students who have graduated during the year and it is distributed free of charge to all leading companies, where it serves as a useful reference book to find appropriate candidates for present and future vacancies.

6. Co-curricular Learning

- In order to promote *learning* that is active, self-motivated, exploratory and attentive, a wide range of learning opportunities, both curricular and co-curricular are used.
- It includes student research, internships, recreational and athletic programs, and co-curricular opportunities, such as, academic societies and student councils.
- It should be noted that an *8 week internship* with a reputable company is a compulsory *pre-requisite* for graduation. This is to give the students a foretaste of what actually happens in industry, an effort to bridge the gulf between the classroom and the industry.
- Furthermore, an *annual dinner* is held with its leading alumni and adjunct faculty, particularly those who are gold medalists or are working in top multinational organizations, to network with the industry for innovative curriculum development, internships, placements, sponsorships and joint activities.

f. Program Objective Assessment

Objectives	How Measured	When Measured	Improvement Identified	Improvement Made
Have a strong foundation in science and focus in health, agriculture, genomics, biotechnology, environmental sciences etc.	Through exams, quizzes, course work and project.	Each semester.	Need for periodic revision of curriculum as new techniques and methodologies are evolving rapidly.	Board of studies (BOS) is being held on biannual basis.
Be able to Design	Through exams,	Each	Need to	Bench work is made

and conduct experiments to study the biological systems and analyze and interpret data and generate clear conclusions.	quizzes, course work and project.	semester.	introduce more design projects to enhance critical thinking and problem solving skills.	compulsory for all lab related courses.
Be able to demonstrate professional interaction and communicate effectively with team members.	Through course work and project.	Each semester.	Need to improve on technical report writing skills.	Students have been provided with a basic layout of report expected of them, which includes: i. Problem statement ii. Literature survey iii. Methodology iv. Experimental trials v. Results vi. Conclusion vii. References
Be able to work efficiently in multidisciplinary teams.	Through exams and project work of multidisciplinary subjects: **BIO 4721** Advanced biochemical techniques **BIO4804** Final Year Project	7^{th} – 8^{th} Semester	N/A	N/A
Be prepared for a	Through exams,	Each	The	The lectures include

variety of biological careers, graduate studies, and continuing education.	quizzes, course work and lab work.	semester.	importance of continued learning is apparent to students in projects where they find that they need more information than they obtained in their earlier classes.	structured presentations (for introduction and overview of topics) but students are encouraged to complement the lecture materials by reading recommended and topic's relevant books. The reason for providing learning materials in a more flexible manner is to encourage students to take ownership and control of their learning.
Practice professional and ethical responsibility, and, be aware of the impact of their designs on human-kind and the environment.	Through exams and project work of following subjects: **BIO 4721** Advanced biochemical techniques **BIO4804** Final Year Project	7^{th} – 8^{th} Semester	N/A	N/A

Table 1.2: Program Objectives Assessment[4]

Standard 1-2 Program Outcomes

a. Outcomes versus Objectives

Table 1 graphically shows the relation between Outcomes and Objectives and how achievement of the Program Outcomes supports achievement of the Program Objectives.

[4] Table 1.2 of PT Report is the Table 4.1 (Program Objectives Assessment) of AT Report

Program Objectives	Expected Outcomes										
	1	2	3	4	5	6	7	8	9	10	11
1	✓					✓		✓			
2		✓	✓	✓							
3					✓		✓			✓	
4					✓				✓		
5	✓					✓		✓			✓
6					✓	✓	✓	✓	✓		✓

Table 1.3: Matrix of Program Objectives vs. Expected Outcomes[5]

b. Employer's Survey

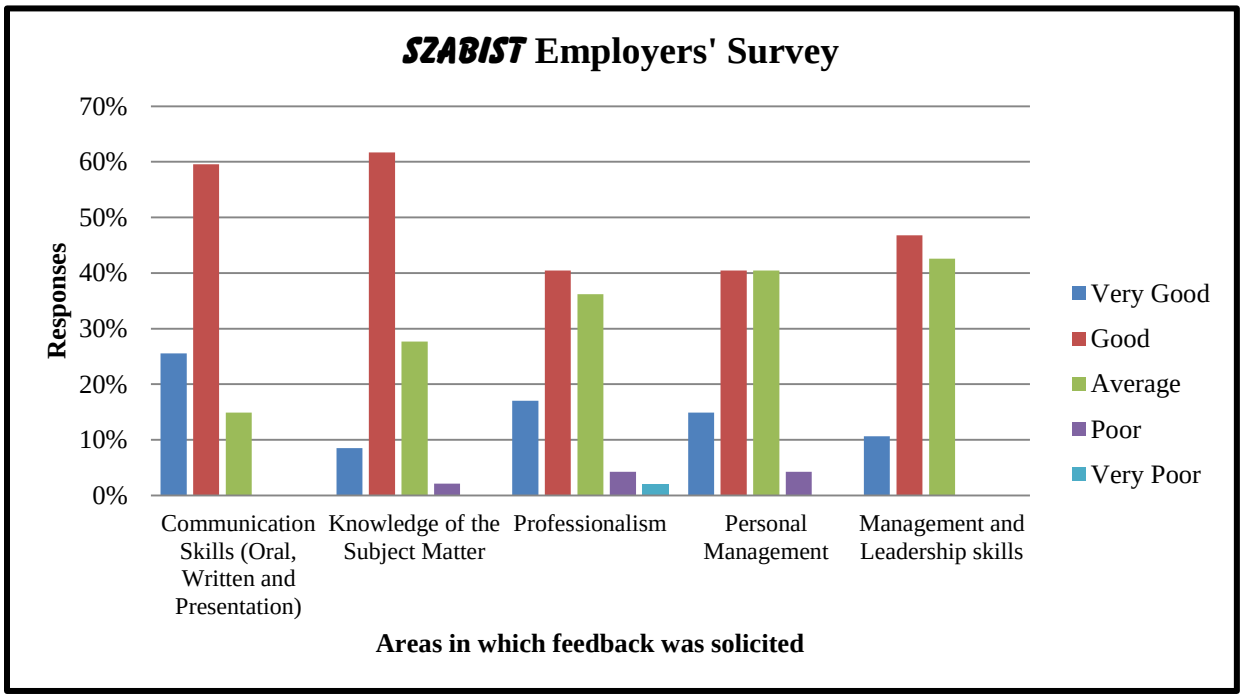

Figure 1.1

c. Alumni Survey

Not Applicable for BS-Biosciences program

[5] Table 1.3 of PT Report is the Table 4.2 (Outcomes versus Objectives) of AT Report

d. Graduating Students' Survey

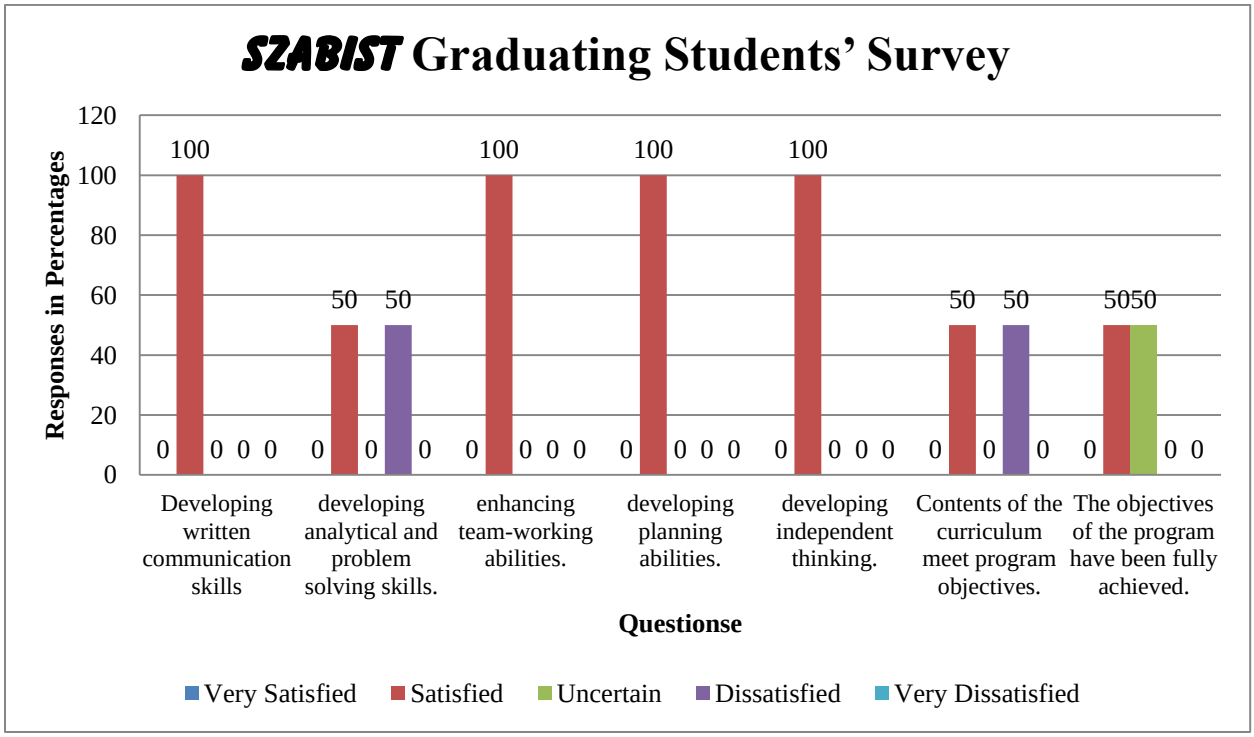

Figure 1.3

Standard 1-3 Assessment Results and Improvement Plans

a. Describe the action taken based on the periodic assessments

Each semester, a series of activities are executed which are intended to lead to improvement in the Biosciences Program. The following timetable summarizes these activities.

	Deadline	Responsible Party	Activity
1	2 month prior to semester	Head of Department	Submit to Vice President Academics document outlining number of faculty and lab technicians (if required) needed and their respective specialization.
2	2 weeks prior to semester	Instructors	Submit to Head of Department course syllabus which outlines how achievement of Program Outcomes will be assessed in course.
3	1 week prior to semester	Head of Department	Discuss and approves assessment measures identified on syllabi in meeting with concerned faculty.

4	5th week of semester	Academic Department	Conducts student evaluation of course instructors to determine any potential gap in learning processes.
5	16th week of semester	Instructors	Submit to Head of Department a course file to assess coverage of course outline and Learning outcomes.

Table 2.4: Action taken based on the periodic assessments

- Furthermore, each year in April, Head of Department submits annual budget to Vice President Academics, which includes both operational and developmental budget as per need of the program.
- For periodic revision of curriculum, Board of Studies meeting is held bi-annually.

b. Describe major future program improvement plans based on recent assessments

	Deadline	Responsible Party	Activity
1	July, 2016	HR Department	Faculty hiring to improve Student-teacher ratio, which presently stands.
2	August, 2016	Department's Focal Person to Library	Efficient utilization of library budget, to increase number of books available significantly.
3	October, 2016	Head of Department	Expansion of Board of Studies to include people from diverse industry background.
4	October, 2016	Vice President and Head of Department	Based on teachers' evaluations by the students, the Vice President evaluates the faculty which is then discussed with Head of Department. Faculty with poor evaluations is then consulted by Head of Department to identify potential shortcomings and measures to ensure improve student learning. A subsequent evaluation then carried out, in case if evaluation remains poor, faculty is not retained.
5	November, 2016	Head of Department	Refurbishment of new labs to extend the facility.

Table 3.5: Major future program improvement plans based on recent assessments

c. List strengths and weaknesses of the program

Strengths

- The program in itself is unique since SZABIST is the pioneer institute offering BS Biosciences degree in the province of Sindh.
- Curriculum is revised periodically to take into account new techniques and methodologies that are evolving throughout the world, thereby dictating the professionals to keep pace with time and adapt to these changes for future technological developments. For this purpose, Board of Studies meetings is being held biannually.
- Faculty is from multidisciplinary background.
- 50% scholarship is offered to each student.
- A six week internship is mandatory for students.

Weakness

- The program is in its initial phase, hence have limited number of books in library.
- Research Journals have not been subscribed on regular basis to furnish students with latest advances in biological research and development.
- Lack of job opportunities for the students and no linkage between FMCG companies, pharmaceutical industry, hospital and healthcare centers.
- For better course coverage, there is need to refurbish Biosciences related labs. Department does not have a Project lab, which students can utilize to carry out their projects, in particular their final year design project. Manpower is needed in term of staff members to improve the quality work in Biosciences lab.

d. List significant future plans for the program

- Establishment of individual labs for molecular biology, animal tissue culture facility, and animal house facility.
- Efficient utilization of library budget, to increase number of books available significantly.
- Expansion of Board of Studies to include people from diverse industry background.

Standard 1-4 Overall Performance Using Quantifiable Measures[6]

a. Indicate the GPA of Successful students per semester, time required to complete the program, drop out ratio of students per semester (of the last 3 years)

- **GPA of Successful students per semester**

The minimum passing grade in each course of the program is D (GPA 1.5). Therefore, all students who scored a GPA of 1.5 or above are classified as successful.

Semester GPA	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Total Average
Average GPA	2.62	2.78	2.86	2.92	2.89	2.93	2.83

Table 1.6: Average GPA

- **Time required to complete the program**

The four year BS Biosciences program consists of 8 semesters and 135 credits. The maximum time to complete the degree is 7 years.

- **Drop out ratio of students per semester**

	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Total Average
Dropouts	5	0	2	2	3	2	2.33
Enrollment	41	59	64	80	97	114	75.83
Dropout Ratio	0.12	0.00	0.03	0.03	0.03	0.02	0.04

Table 1.7: Dropout ratio

Please note as per SZABIST dismissal policy, if a student fails to secure semester CGPA of 2 or more in two consecutive semesters, then in that case he or she is dropped from the Program. Furthermore, it can be seen from above table that dropout rate is higher during fall semester, as majority of these students are dropped from the program because of not meeting minimum requirements of 60% in intermediate/A-level examinations.

[6]The source of information is ZAB Solutions.

b. Indicate the percentage of employers that are strongly satisfied with the performance of the department's graduate.

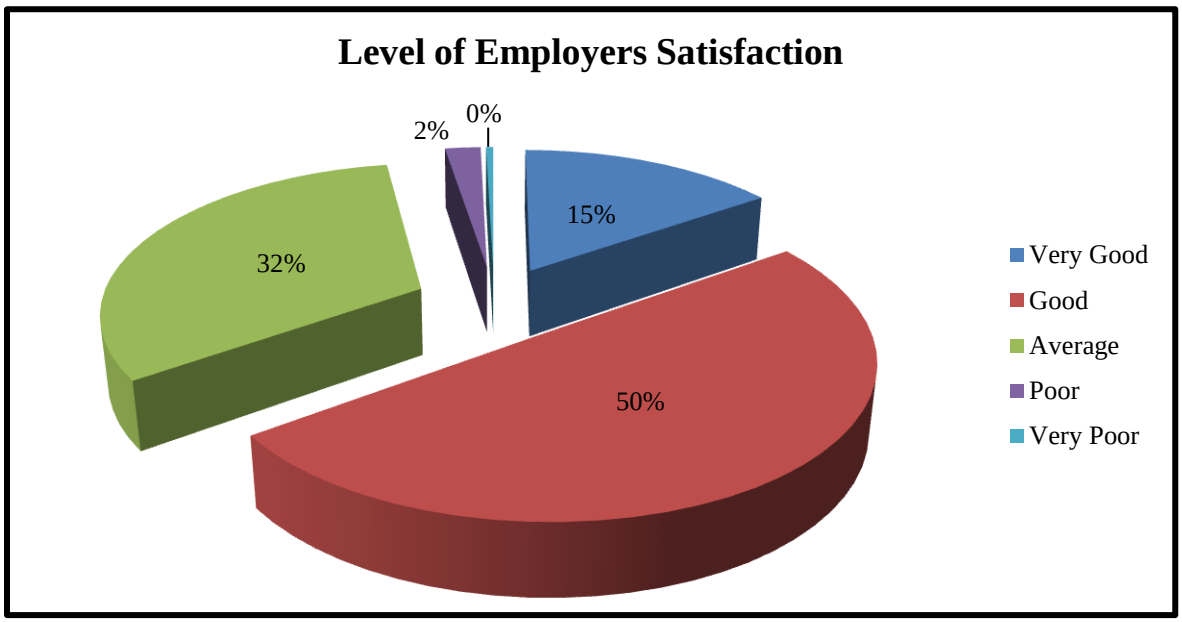

Figure 1.4

c. Percentage of Student Evaluation/Assessment results for all the courses and faculty.[7]

Year	Semester	Faculty & Courses Rating					
		Excellent	**Very Good**	**Good**	**Satisfactory**	**Not Satisfactory**	**Poor**
2013	Fall	50	27	23	0	0	0
	Spring	25	69	6	0	0	0
2014	Fall	44	38	13	6	0	0
	Spring	39	43	14	0	4	0
2015	Fall	71	24	3	3	0	0
	Spring	64	15	8	8	0	5

Table 1.8: Faculty & Courses Rating

- 90 or Above : Excellent

[7] The source of information is the Academic Office.

- 80 – 89 : Very Good
- 70 – 79 : Good
- 60 – 69 : Satisfactory
- Below 60 : Unsatisfactory

d. List of research activities i.e. journal publications, funded projects, conference publications per faculty and per year, and the faculty awarded excellence in research.

Journal Publications

1. **Ali K**, Verpoorte R, Wilson EG, Choi YH. (2015). Chemical characterization of marine organisms using a metabolomics approach. In: Marine biomedicine: from beach to bedside. Ed. Baker BJ. pp. 23-42, CRC Press.
2. **Ashraf F, Bashir A, Mehmood S, and Ali K**. (2014) Cost effective in-vitro propagation of ornamental plants and evaluation of antimicrobial activities against staphylococci. Int J Sci, Engineering and Computer Technology. Vol 4(1-2):10-13.
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Conferences

- Participated in Ninth International Biennial Conference of Pakistan Society of Microbiology, held during January 28 – 31, 2013 at ICCBS, HEJ Research Institute, University of Karachi, Pakistan.
- Oral Presentation: Ms. Asma Bashir, Lecturer presented her research paper "Thrombolytic potential of aqueous and methanolic crude extracts of Camiellia sinensis (Green tea): In vitro study in BIOMICRO WORLD 2013 held on 2nd -4th October, 2013 at Madrid, Spain.
- Oral Presentation: Ms. Asma Bashir, Lecturer presented her research paper Participated in a conference as an oral presenter in European Society for Pediatric Infectious Diseases (ESPID) 2014 held on 6th -4th May, 2014 at Dublin, Ireland.
- Poster Presentation on Microbiological analysis and isolation of antibiotic resistant bacteria from Gharo water samples (Karachi-Pakistan) in Ninth International Biennial Conference of Pakistan Society of Microbiology, held during at ICCBS, HEJ Research Institute, University of Karachi, Pakistan.

e. Number of short courses workshops, seminars organized on community service level.

Workshops

- An awareness workshop title "Bio safety and Bio security" was organized on 23rd September, 2013.
- Participated in a workshop on "International Workshop on Bioinformatics Tools in Structural Biology" on August 26th – 28th, 2013 at ICCBS, Dr. Panjwani Center for Molecular Medicine and Drug Research, University of Karachi, Pakistan.
- Health Seminar on Diabetic and hypertension was organized on 3rd April, 2014.
- "Advanced Bio-analytical Techniques in Omics", Dr. Kamran Azim (HEJ Research Institute of Chemistry) Dr. Uzma Nasib (National Center for Proteomics), Mr. Furqan Kabir (Aga University Hospital and Laboratories), Wednesday, 4th September 2013.
- A women awareness seminar title "Educate the young female generation about health values and nutritional benefits" on behalf of Nestle was organized on 18th April, 2013.

Guest Speaker Session:

- "In-vitro Fertilization", Mr. Mohammad Tariq, Australian Concept Infertility Medical Center, Wednesday, 10th April 2013.
- "Plant Biotransformation", Dr. Saifullah, International Center for Chemical and Biological Sciences, Thursday, 11th April 2013.
- Molecular Diagnostics, current technology and Application was organized on 12 February, 2014.
- Drug and health awareness session was organized in collaboration with DUHS and Arahman Arrahim on 26 March, 2014.
- A guest speaker on "Advances in Molecular research" by Dr. S. M Shahid on 16 January, 2014
- Guest lectures organized on campus by Ms. Hana'a Iqbal, Research Officer Jamil Ur Rahman Center for Genomics Research & Dr. Panjwani Center for Molecular Medicine and Drug Research on Tuesday April 7, 2015

Industrial Visits

- Visit to Engro Foods on 8th April 2016.

f. Faculty and student surveys results to measure the administrative services provided.[8]

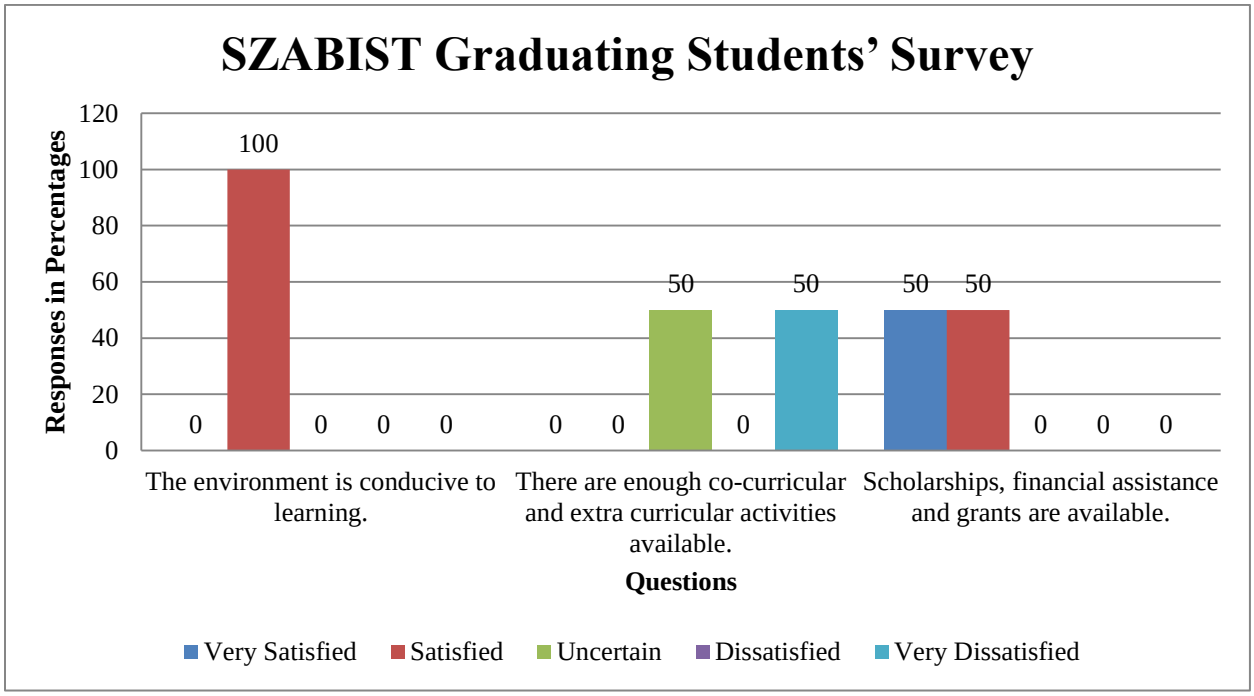


Figure 1.6

[8] The source of information is Faculty Survey, Graduating Student Survey, and Alumni Survey.

CRITERION 2: CURRICULUM DESIGN AND ORGANIZATION

Standard 2-1	Courses vs. Objectives
Standard 2-2	Theory, Problem Analysis / Solution and Design in Program
Standard 2-3	Mathematics & Basic Sciences Requirements
Standard 2-4	Major Requirements as Specified by Accreditation Body
Standard 2-5	Humanities, Social Sciences, Arts, Ethical, Professional & Other Requirements
Standard 2-6	Information Technology Content Integration throughout the Program
Standard 2-7	Communication Skills (Oral & Written)

Criterion 2 – Curriculum Design and Organization

Standard 2-1 Courses versus objectives

a. Title of Degree Program

Bachelor of Science in Biosciences

b. Definition of Credit Hour

The student shall become eligible for the award of Bachelor of Sciences in Biosciences program, only on passing a minimum of one hundred and thirty five credit hours, among which there is a combination of 2+1, 3+0, courses from Molecular Biology, Biotechnology and Biological subjects. The final design project has 0+6 hours, distributed in 7^{th} and 8^{th} semester. It should be noted that for Biosciences program, for courses with lab work one credit hour of theory is equivalent to forty five minutes contact time of teaching, whereas one credit hour of lab is equivalent to two contact hours of lab work. For courses without lab work one credit hour of theory is equivalent to one contact hour of teaching.

c. Degree Plan[9]

Compulsory Requirements (the student has no choice)		**General Courses to be chosen from other departments**		**Discipline Specific Foundation Courses**		**Major courses including research project/internship**		**Elective Courses within the major**	
6 courses		**5 Courses**		**12 Courses**		**17 Courses**		**4 Courses**	
18 Credit hours		**15 Credit Hours**		**36 Credit Hours**		**51 Credit Hours**		**16 Credit Hours**	
Subject	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**
1. English I	3	1. Psychology	3	1. Biochemistry-I	3	1. Animal and Plant Tissue Culture	3	1. Elective-I*	3
2. English II	3	2. Research Methodology	3	2. Microbiology-I	3	2. Hematology	3	2. Elective-II*	3
3. Islamic Studies /Ethics & Pakistan Studies	3	3. Business Management	3	3. Physiology-I	3	3. Lab Management	3	3. Elective-III*	3
4. Fundamental Mathematics	3	4. Environmental Sciences	3	4. Biochemistry-II	3	4. Endocrinology	3	4. Elective-IV*	3
5. Statistics	3	5. Bioinformatics	3	5. Microbiology-II	3	5. Genetic Engineering	3		
6. Introduction to Computing	3			6. Immunology	3	6. Biotechnology-I	3		
				7. Physiology-II	3	7. Pharmacology-I	3		
				8. Cell Biology	3	8. Biotechnology-II	3		
				9. Molecular Biology	3	9. Nutrition and Dietetics	3		
				10. Epidemiology	3	10. Pharmacology-II	3		
				11. Genetics	3	11. Agricultural Science	3		
				12. Bioethics	3		3		

[9] *Electives can be selected from the attached "List of Electives"

						12. Biophysics 13. Neurochemistry 14. Human Anatomy 15. Introduction To Pathology 16. Research Report I 17. Research Report II	3 3 3 3		

Table 2.1: Degree Plan

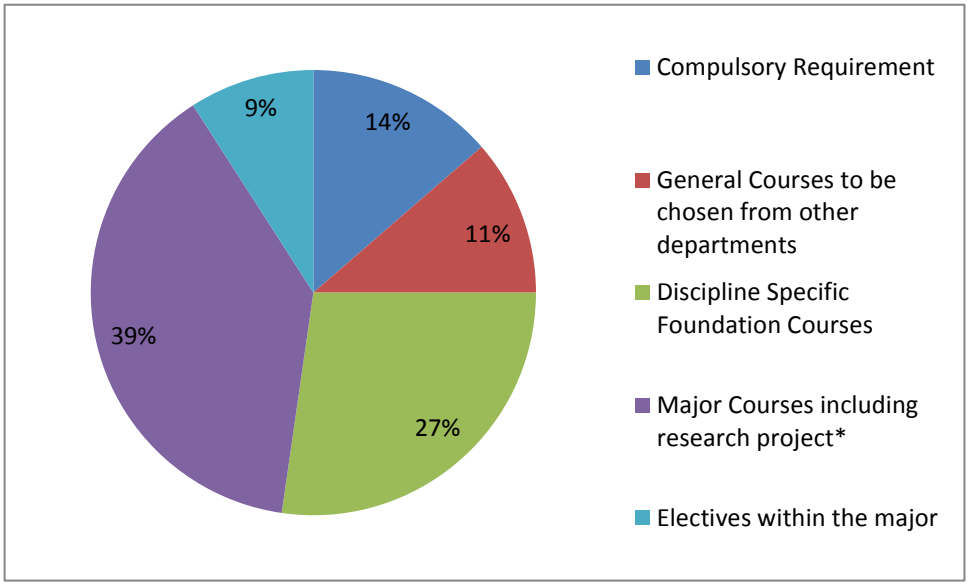
STRUCTURE OF BS-BIOSCIENCES PROGRAM AT SZABIST

Sr.	Categories	No of courses	Credit Hours	Percentage
1.	Compulsory Requirement	6	18	13.6
2.	General Courses to be chosen from other departments	5	15	11.37
3.	Discipline Specific Foundation Courses	12	36	27.27
4.	Major Courses including research project*	17	51	38.63
5.	Electives within the major	4	16	9.09
	Total	**44**	**135**	**100**

Table 2.2: Structure of BS-Biosciences Program at SZABIST

*Research project is of 6 credit hours.

- Total numbers of Credit hours 135
- Duration 4 years
- Semester duration 16 weeks
- Semesters 8
- Course Load per semester 15-18 Credit hours
- Number of courses per semester 5-6 courses



d. Curriculum Course Requirement

SZABIST offers a four year comprising of eight semesters, BS (Biosciences) degree. BS Biosciences program is essentially a day program and consists of 44 courses (five or six courses per semester) with a total of 135 credit hours. The maximum time limit to complete the BS degree is seven years. Details of degree plan are as follows:

BS: BIOSCIENCES

First Year

SEMESTER-I

S. No	CODE	SUBJECT	Credit Hour
01	BIO 1103	English I	3
02	BIO 1107	Fundamental Mathematics	3
03	BIO 1206	Physiology I	3
04	BIO 1209	Introduction to Microbiology	3
05	BIO 2301	Biochemistry I	3
		TOTAL Credit Hours	**15**

SEMESTER-II

S. No	CODE	SUBJECT	Credit Hour
01	BIO 1202	English II	3
02	BIO 1207	Advanced Microbiology	3
03	BIO 1208	Statistics	3
04	BIO 2305	Physiology II	3
05	BIO 2401	Biochemistry II	3
06	BIO 3504	Immunology	3
		TOTAL Credit Hours	**18**

Second Year

SEMESTER-III

S. No	CODE	SUBJECT	Credit Hour
01	BIO 1101	Cell Biology	3
02	BIO 1104	Introduction to Computing	3
03	BIO 2303	Islamiat and Pakistan Studies/Humanities	3
04	BIO 2307	Plant Tissue Culture	3
05	BIO 2404	Lab Management	3
06	BIO 2405	Hematology	3
		TOTAL Credit Hours	**18**

SEMESTER-IV

S. No	CODE	SUBJECT	Credit Hour
01	BIO 2306	Psychology	3
02	BIO 2406	Genetic Engineering	3
03	BIO 3502	Endocrinology	3
04	BIO 3604	Neurochemistry	3
05	BIO 4803	Molecular Biology	3
		TOTAL Credit Hours	**15**

Third Year

SEMESTER-V

S. No	CODE	SUBJECT	Credit Hour
01	BIO 2302	Biotechnology	3
02	BIO 2402	Bioinformatics	3
03	BIO 3503	Genetics	3
04	BIO 3505	Pharmacology I	3
05	BIO 3506	Animal Cell and Tissue Culture	3
		TOTAL Credit Hours	**15**

SEMESTER-VI

S. No	CODE	SUBJECT	Credit Hour
01	BIO 2304	Nutrition and Dietetics	3
02	BIO 2403	Environmental Science	3
03	BIO 3605	Pharmacology II	3
04	BIO 3606	Advanced Biotechnology	3
05	BIO 4801	Bioethics	3
06	BIO 4xxx	Elective I	3
		TOTAL Credit Hours	**18**

6-8 WEEKS INTERNSHIP IN A RELATED FIELD—MANDATORY

(0 Credit Hours)

Fourth Year

SEMESTER-VII

S. No	CODE	SUBJECT	Credit Hour
01	BIO 3601	Agricultural Science	3
02	BIO 3602	Human Anatomy	3
03	BIO 4702	Introduction to Pathology	3
04	BIO 4703	Research Methodology	3
05	BIO 4xxx	Elective II	3
06	BIO 4xxx	Elective III	3
		TOTAL Credit Hours	**18**

SEMESTER-VIII

S. No	CODE	SUBJECT	Credit Hour
01	BIO 4701	Business Management	3
02	BIO 4704	Toxicology	3
03	BIO 4802	Biophysics	3
04	BIO 4804	Research Report	6
05	BIO 4xxx	Elective IV	3
		TOTAL Credit Hours	**18**

LIST OF ELECTIVES

S. No	Code	Subject	Credit Hours
01	BIO 4721	Advance Biochemical Techniques	3
02	BIO 4722	Medical Transcription	3
03	BIO 4822	Nanotechnology	3
04	BIO 4725	Advanced Molecular Techniques	3
05	BIO 4726	Applied Enzymology	3
06	BIO 4723	Virology	3
07	BIO 4827	Systems Biology	3
08	BIO 4727	Food Biotechnology	3
09	BIO 4826	Medical Biotechnology	3
10	BIO 4825	Fermentation Biotechnology	3
11	BIO 4823	Stem Cell Research	3
12	BIO 4724	Telemedicine	3

Table 2.3: Curriculum Course Requirements [10]

e. Describe how the program content (courses) meets the program Objectives

Sr.	Courses	1	2	3	4	5	6
1	BIO1101 Cell Biology (Foundation)	✓	✓	✓	✓	✓	
2	BIO1103 English I (Compulsory)	✓		✓	✓		
3	BIO1107 Fundamental Mathematics (Compulsory)	✓		✓	✓		
4	BIO1109 Introduction to Microbiology	✓	✓	✓	✓	✓	

[10] Table 2.3 of PT Report is the Table 4.3 (Curriculum Course Requirements) of AT Report

	(Foundation)						
5	BIO Pakistan Studies (Compulsory)	✓		✓	✓		
6	BIO 3604 Neurochemistry(Major)	✓	✓	✓	✓	✓	✓
7	BIO1207 Advanced Microbiology (Foundation)	✓	✓	✓	✓	✓	
8	BIO2301 Biochemistry-I (Foundation)	✓	✓	✓	✓	✓	
9	BIO1202 English II(Compulsory)	✓		✓	✓		
11	BIO1208 Statistics (Compulsory)	✓		✓	✓		
12	BIO Islamiat / Humanities (Compulsory)	✓		✓	✓		
13	BIO 3602 Human Anatomy(Major)	✓	✓	✓	✓	✓	✓
14	BIO1206 Physiology-I (Foundation)	✓	✓	✓	✓	✓	
15	BIO1104 Introduction to Computing (Compulsory)	✓		✓	✓		
16	BIO2401Biochemistry-II (Foundation)	✓	✓	✓	✓	✓	
17	BIO3504 Immunology (Foundation)	✓	✓	✓	✓	✓	
18	BIO2305 Physiology-II (Foundation)	✓	✓	✓	✓	✓	
19	BIO2404 Lab Management (Major)	✓	✓			✓	✓
20	BIO4803 Molecular Biology (Foundation)	✓	✓	✓	✓	✓	
21	BIO 4702 Introduction to Pathology(Major)	✓		✓	✓	✓	
22	BIO3503 Genetics (Foundation)	✓	✓	✓	✓	✓	
23	BIO2406 Genetic Engineering (Major)	✓	✓	✓	✓	✓	✓
24	BIO2302 Biotechnology (Major)	✓	✓	✓	✓	✓	✓
25	BIO2405 Hematology (Major)	✓	✓	✓	✓	✓	✓
26	BIO4801 Bioethics (Foundation)	✓	✓	✓	✓	✓	

27	BIO3505 Pharmacology-I (Major)	✓	✓	✓	✓	✓	✓
28	BIO2306 Psychology (General)	✓	✓			✓	✓
29	BIO3502 Endocrinology (Major)	✓	✓	✓	✓	✓	✓
30	BIO3606 Advanced Biotechnology (Major)	✓	✓	✓	✓	✓	✓
31	BIO3601 Agricultural Science (Major)	✓	✓	✓	✓	✓	✓
32	BIO2304 Nutrition and Dietetics (Major)	✓	✓	✓	✓	✓	✓
33	BIO3605Pharmacology-II (Major)	✓	✓	✓	✓	✓	✓
34	BIO2402 Bioinformatics (General)	✓	✓			✓	✓
35	BIO4804Research Report	✓	✓	✓	✓	✓	✓
36	BIO2309 Animal and Plant Tissue Culture (Major)	✓	✓	✓	✓	✓	✓
37	BIO4703 Research Methodology (General)	✓	✓			✓	✓
38	BIO4XXX Elective-I (Elective)			✓		✓	✓
39	BIO4XXX Elective-II (Elective)			✓		✓	✓
40	BIO4802 Biophysics (Major)	✓	✓	✓	✓	✓	✓
41	BIO4701 Business Management (General)	✓	✓			✓	✓
42	BIO2403 Environmental Sciences (General)	✓	✓			✓	✓
43	BIO3509 Epidemiology (Foundation)	✓	✓	✓	✓	✓	
45	BIO4XXX Elective-III (Elective)			✓	✓		✓
46	BIO4XXX Elective-IV (Elective)			✓	✓		✓

Table 2.4: Courses vs. Objectives

f. Courses versus Outcomes, List the courses and tick against relevant outcomes

Sr.	Courses	1	2	3	4	5	6	7	8	9	10	11
1	BIO1101 Cell Biology (Foundation)	✓	✓								✓	✓
2	BIO1111 English for General Purposes (Compulsory)							✓	✓		✓	✓
3	BIO1107 Fundamental Mathematics (Compulsory)							✓	✓		✓	✓
4	BIO1109 Introduction to Microbiology (Foundation)	✓	✓								✓	✓
5	BIO Pakistan Studies (Compulsory)							✓	✓		✓	✓
6	BIO Chemistry (General)	✓	✓								✓	✓
7	BIO1207 Advanced Microbiology (Foundation)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
8	BIO2301 Biochemistry-I (Foundation)	✓	✓								✓	✓
9	BIO1211 English for Academic Purposes (Compulsory)							✓	✓		✓	✓
10	BIO Sociology (General)	✓	✓								✓	✓
11	BIO1208 Statistics (Compulsory)							✓	✓		✓	✓
12	BIO Islamiat / Humanities (Compulsory)							✓	✓		✓	✓
13	BIO 2411 English for Professional Purposes (Compulsory)							✓	✓		✓	✓
14	BIO1206 Physiology-I (Foundation)	✓	✓								✓	✓
15	BIO1104Introduction to Computing (Compulsory)							✓	✓		✓	✓
16	BIO2401Biochemistry-II (Foundation)	✓	✓								✓	✓

17	BIO3504 Immunology (Foundation)	✓	✓								✓	✓
18	BIO2305 Physiology-II (Foundation)	✓	✓								✓	✓
19	BIO2404 Lab Management (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20	BIO4803 Molecular Biology (Foundation)	✓	✓								✓	✓
21	BIO Foreign Language (Compulsory)							✓	✓		✓	✓
22	BIO3503 Genetics (Foundation)	✓	✓								✓	✓
23	BIO2406 Genetic Engineering (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24	BIO2302 Biotechnology (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25	BIO2405 Hematology (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26	BIO4801 Bioethics (Foundation)	✓	✓								✓	✓
27	BIO3505 Pharmacology-I (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
28	BIO2306 Psychology (General)	✓	✓								✓	✓
29	BIO3502 Endocrinology (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
30	BIO3606 Advanced Biotechnology (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
31	BIO3601 Agricultural Science (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
32	BIO2304 Nutrition and Dietetics (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
33	BIO3605Pharmacology-II (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
34	BIO2402 Bioinformatics (General)	✓	✓								✓	✓
35	BIO4804Research Report	✓							✓	✓	✓	
36	BIO2309 Animal and Plant Tissue Culture (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
37	BIO4703 Research Methodology	✓	✓								✓	✓

	(General)											
38	BIO4XXX Elective-I (Elective)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
39	BIO4XXX Elective-II (Elective)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40	BIO4802Biophysics (Major)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
41	BIO4701 Business Management (General)	✓	✓								✓	✓
42	BIO2403 Environmental Sciences (General)	✓	✓								✓	✓
43	BIO3509 Epidemiology (Foundation)	✓	✓								✓	✓
44	BIO4XXX Elective-III (Elective)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
45	BIO4XXX Elective-IV (Elective)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 2.5: Courses versus Outcomes[11]

Standard 2-2 Theory, Problem Analysis/Solution and Design in Program

a. Table 4.5 Standards 2-2 requirements

Elements	**Courses (Sr. #)**
Theoretical Background	1,2,3,4,5,6,7,8,9,12,13,14,15,16,17,18,20,21,22,23,24,25,26,27,29,30,31,32,33, 36,40,42,43
Problem Analysis	3,10,11,13,19,22,23,26,28,32,34,35,37,
Solution Design	1,4,6,7,8,14,15,16,17,18,20,24,27,30,33,34,35,36,37

Table 2.6: Courses versus Outcomes[12]

[11] Table 2.5 of PT Report is the Table 4.4 (Curriculum Course Requirements) of AT Report
[12] Table 2.6 of PT Report is the Table 4.5 (Curriculum Course Requirements) of AT Report

Standard 2-3 Basic Sciences Requirements

Compulsory Requirements (the student has no choice)		General Courses to be chosen from other departments		Discipline Specific Foundation Courses		Major courses including research project/internship		Elective Courses within the major	
6 courses		5 Courses		12 Courses		17 Courses		4 Courses	
18 Credit hours		15 Credit Hours		36 Credit Hours		51 Credit Hours		16 Credit Hours	
Subject	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**	**Subject**	**Cr. Hr**
1. English I	3	1. Psychology	3	1. Biochemistry-I	3	1. Animal and Plant Tissue Culture	3	1. Elective-I*	3
2. English II	3	2. Research Methodology	3	2. Microbiology-I	3	2. Hematology	3	2. Elective-II*	3
3. Islamic Studies /Ethics & Pakistan Studies	3	3. Business Management	3	3. Physiology-I	3	3. Lab Management	3	3. Elective-III*	3
4. Fundamental Mathematics	3	4. Environmental Sciences	3	4. Biochemistry-II	3	4. Endocrinology	3	4. Elective-IV*	3
5. Statistics	3	5. Bioinformatics	3	5. Microbiology-II	3	5. Genetic Engineering	3		
6. Introduction to Computing	3			6. Immunology	3	6. Biotechnology-I	3		
				7. Physiology-II	3	7. Pharmacology-I	3		
				8. Cell Biology	3	8. Biotechnology-II	3		
				9. Molecular Biology	3	9. Nutrition and Dietetics	3		
				10. Epidemiology	3	10. Pharmacology-II	3		
				11. Genetics	3	11. Agricultural Science	3		
				12. Bioethics		12. Biophysics	3		

						13. Neurochemistry 14. Human Anatomy 15. Introduction To Pathology 16. Research Report I 17. Research Report II	3 3 3 3		

Table 2.7: Basic Sciences Requirements

Standard 2-4 Major Requirements as Specified by Accreditation Body

As per HEC guidelines, major requirements for completion of BS (Biosciences) program are listed below:

Duration: 4 years

Number of semesters: 8

Number of weeks per semester: 15-16 (16 for teaching and 2 for examinations)

Total number of credit hours: 135

Number of credit hours per semester: 15-18

Scientific Courses (Minimum): 70 -75 %

Non-Scientific Courses (Maximum): 25 - 30 %

Standard 2-5 Humanities, Social Sciences, Arts, Ethical, Professional & Other Requirements

a. List the courses required by the Accreditation Body

Sr.	Courses
1	English I
2	English II
4	Islamic Studies /Ethics & Pakistan Studies
5	Fundamental Mathematics
6	Statistics
7	Introduction to Computing
8	Psychology
9	Research Methodology
10	Business Management
11	Environmental Sciences
12	Bioinformatics
13	Psychology

Table 2.8: Courses required by the Accreditation Body

Standard 2-6 Information Technology Content Integration throughout the Program

a. List the courses required by the Accreditation Body

1. Introduction to Computing
2. Bioinformatics

It should be noted in addition to above mentioned courses; SZABIST BS (Biosciences) program also offers an introductory computing course titled “BIO 1104 Introduction to Computing”. The objective is to provide a strong foundation that the student can build on in later courses across the spectrum of computational biology.

b. Describe how they are applied and integrated throughout the program

Introduction to Computing

Introduction to computing directly related to the study of Biology for the increasing number of computer applications being developed that relate to Biology.

Bioinformatics

The science of bioinformatics actually develops algorithms and biological software of computer to analyze and record the data related to biology for example the data of genes, proteins, drug ingredients and metabolic pathways. As biological data is always in raw form and there is a need

of certain storage house in which the data can be stored, organized and manipulated. Biological software and databases provide the scientists this opportunity so that the data can be extracted from these database easily and can be used by the scientists.

Standard 2-7 Communication Skills (Oral & Written)

a. List the courses required by the Accreditation Body

1. English I
2. English II

b. Describe how they are applied in the program.

English I

Presentation skills are fundamental to today's organizations, requiring the need to communicate key messages, often with influencing expectations which are reliant on the style and competency of a presentation. Participants learn the principles of a good presentation and have the opportunity to practice and experience these principles during the course.

English II

This course introduces research process to undergraduate students. It covers review of technical publications and journals, research problem formulation, research methodologies and article drafting. The students are required to undertake a research project that would result in an APA style formatted article.

CRITERION 3: LABORATORIES AND COMPUTING FACILITIES

Standard 3- 1	Lab Manuals / Documentation / Instructions
Standard 3- 2	Adequate Support Personnel for Labs
Standard 3- 3	Adequate Computing Infrastructure and Facilities

Criterion 3 – Laboratories and Computing Facilities

SZABIST is equipped with state of the art computing facilities with round the clock high bandwidth connectivity to the internet. Moreover, Wi-Fi is enabled in 90, 100 and 154 campuses to access network resources wirelessly.

To ensure the integrity and security purpose of the network, students are not allowed to install their own software's on SZABIST computers. For course related assignments and projects students can ask for approval from Manager Systems of software installation.

Computer labs are open to all students for computing and printing facilities from 8:00a.m to 10:00p.m from Monday to Saturday. Color and laser printing is available at nominal cost.

Furthermore, in addition to theory lectures, Biosciences students are given extensive lab/practical hours in their curriculum. To meet this requirement an adequate amount of quality equipment is available in the labs. The details of all equipment are mentioned below. Please note all labs are open for Biosciences students in mentioned slots which are displayed on each lab notice board.

Lab Title	**General purpose lab I**
Location	154 Campus
Objectives	The lab aims to introduce the preliminary concepts related to fundamental courses of Biosciences.
Adequacy for Instruction	a. Lab manuals also provided to students at the start of the semester. b. The lab is fully equipped with Latest and precise equipment's. c. There are 8 workstations, each for at least two students to accommodate 16 students of each section. d. Lab is fully Air conditioned and internet facility is also being provided with backup of ups. e. An office desk is also provided to a Lab Technician with a designated PC. f. A notice board is also displayed in the lab for class scheduling, marks distribution, some important precautions are also displayed on it. g. One white board is also available h. Multimedia projector or OHP is also available from academics office in request from instructor. i. First Course Instructor demonstrates the experiment with its objective, principle and its application. While performing the practical our lab technician is also helps out the students. After completion of an experiment Lab Technician verifies the experiment results on the same day.
Courses covered	a. Introduction to Microbiology

	b. Advance microbiology c. Physiology I d. Physiology II e. Biochemistry I f. Biochemistry II g. Cell biology h. Hematology
Major Apparatus and Kits	**a. List of Microbiology related Apparatus and kits** 1. Quick Test Strip for gram negative bacteria 2. Quick Test Strip for gram negative bacteria 3. Antibiotic disc 4. Inoculating needle , wire loops and spreader 5. Microscopes 6. Hot plate Magnetic stirrer 7. Vortex 8. Weighing balance 9. Incubator 10. Refrigerator 11. Autoclave 12. Distillation unit **b. List of physiology related Apparatus and kits** 1. Retinoscope 2. Otoscope 3. Intraocular pressure measurement system 4. Stethoscope 5. Sphygmomanometer 6. Sahil's haemoglobinometer 7. Clinical (patellar) Hammer 8. Perimeter 9. Spirometer 10. Ishihara's chart 11. Tuning fork 12. Weight Machine 13. Treadmill 14. ECG Machine **c. List of biochemistry related Apparatus and kits** 1. Glucometer 2. Vortex

	3. Water bath 4. Glass burettes and pipettes 5. Spectrophotometer 6. Monosaccharide detection setup 7. Estimation of glucose setup (DNS & GOD-PAP) 8. Protein estimation setup **d. List of Cell biology related Apparatus and kits** 1. Motor and pestle 2. Glass chromatography columns 3. TLC plates 4. TLC tank 5. Micropipettes 6. Centrifuge 7. Refrigerator 8. Vortex 9. Spectrophotometer **e. List of Hematology related Apparatus and kits** 1. Hemocytometer 2. Hemoglobin meter 3. ESR Apparatus 4. Blood drawing apparatus 5. Compound Microscopes
Lab technician	A dedicated Lab technician having master's degree of related field
Safety Regulations	a. Fire Extinguishers b. First Aid Box

Table 3.1: Labs Information

Lab Title	**General purpose lab II**
Location	172 Campus
Objectives	The lab aims to introduce the preliminary concepts related to fundamental courses of Biosciences.
Adequacy for Instruction	a. Lab manuals also provided to students at the start of the semester. b. The lab is fully equipped with Latest and precise equipment's. c. There are 5 workstations, each for at least two students to accommodate 10 students of each section. d. Lab is fully Air conditioned and internet facility is also being

	provided with backup of ups. e. An office desk is also provided to a Lab technician with a designated PC. f. A notice board is also displayed in the lab for class scheduling, marks distribution, some important precautions are also displayed on it. g. One white board is also available h. Multimedia projector or OHP is also available from academics office in request from instructor. i. First Course Instructor demonstrates the experiment with its objective, principle and its application. While performing the practical our lab technician is also helps out the students. After completion of an experiment Lab Technician verifies the experiment results on the same day.
Courses covered	a. Pharmacology I b. Pharmacology II c. Biotechnology d. Advance biotechnology e. Genetics f. Immunology
Major Apparatus	**a. List of Biotechnology related Apparatus** 1. Incubator 2. Shaking incubator 3. Centrifuge 4. Refrigerated centrifuge 5. Hot plate magnetic stirrer 6. Vortex 7. Weighing balance 8. pH meter 9. SDS PAGE Apparatus **b. List of pharmacology related Apparatus** 1. Kymograph 2. Organ bath 3. Rabbit holder 4. Weight balance 5. Vortex 6. Hot plate magnetic stirrer **c. List of immunology related Apparatus and kits**

	1. ELISA kit 2. ELISA reader 3. RID kit 4. HbsAg & HCV detection kit 5. Micropipettes 6. Incubator 7. water bath 8. shaking water bath **d. List of genetics related Apparatus and kits** 1. Microscopes 2. Weighing balance 3. Stirrer
Lab technician	A dedicated Lab technician having master's degree of related field
Safety Regulations	a. Fire Extinguishers b. First aid box

Table 3.2: Labs Information

Lab Title	**Molecular lab**
Location	172 Campus
Objectives	The lab aims to introduce the preliminary concepts related to molecular and genetic engineering courses of Biosciences
Adequacy for Instruction	a. Lab manuals also provided to students at the start of the semester. b. The lab is fully equipped with Latest and precise equipment's. c. There are 4 workstations, each for at least two students to accommodate 08 students of each section. d. Lab is fully Air conditioned.. e. A notice board is also displayed in the lab for class scheduling, marks distribution, some important precautions are also displayed on it.. f. First Course Instructor demonstrates the experiment with its objective, principle and its application. While performing the practical our lab technician is also helps out the students. After completion of an experiment Lab Technician verifies the

	experiment results on the same day.
Courses covered	a. Molecular biology b. genetic engineering
Major Apparatus	**a. List of apparatus in molecular and genetic engineering** 1. Thermocycler 2. Horizontal electrophoresis assembly 3. Gel documentation system 4. Spectrophotometer 5. Centrifuge 6. Refrigerated centrifuge 7. Vortex 8. Stirrer 9. Plasmid extraction kit 10. DNA extraction kit 11. Water bath 12. Shaking water bath 13. Refrigerator 14. pH meter
Lab technicians	A dedicated Lab technician having master's degree of related field
Safety Regulations	a. Fire Extinguishers b. First aid box

Table 3.3: Labs Information

Lab Title	**Animal & plant tissue culture lab**
Location	172 Campus
Objectives	The lab aims to introduce the preliminary concepts related to molecular and genetic engineering courses of Biosciences
	a. Lab manuals also provided to students at the start of the

Adequacy for Instruction	semester. b. The lab is fully equipped with Latest and precise equipment's. c. There are 2 workstations, each for only one student to accommodate 02 students of each section. d. Lab is fully Air conditioned e. A notice board is also displayed in the lab for class scheduling, marks distribution, some important precautions are also displayed on it. f. First Course Instructor demonstrates the experiment with its objective, principle and its application. While performing the practical our lab technician is also helps out the students. After completion of an experiment Lab Technician verifies the experiment results on the same day.
Courses covered	Animal and plant tissue culture
Major Apparatus	**Animal and plant tissue culture related Apparatus** 1. Laminar fume Hood 2. BioSafety cabinet BSL 2 3. CO_2 Incubator 4. CO_2 cylinder 5. Growth chambers with Florescent light 6. Anemometer
Lab Technicians	A dedicated Lab technician having master's degree of related field.
Safety Regulations	1. Fire Extinguishers 2. First Aid Box

Table 3.4: Labs Information

Lab Title	**Wet Lab**
Location	172 Campus
Objectives	To provide students with a platform for preparation, washing and autoclaving of lab material.

Courses covered	Plant tissue culture
Major Apparatus	1. Autoclave 2. Distillation unit 3. Media Jars
Lab Technician	A dedicated Lab technician having master's degree of related field
Safety Regulations	a. Fire Extinguishers b. First Aid Box

Table 3.5: Labs Information

Standard 3-1 lab Manual / Documentation / Instructions

a. Explain how students and faculty have adequate and timely access to the manuals/documentation and instructions

- Laboratory Manuals/Documentation/Instructions for experiments are available and readily accessible to faculty and students.
- Lab manuals are prepared by concerned faculty and Lab technicians according to the HEC guide lines in advance of the beginning of the course. Lab manuals are updated as required.
- The hard copies of the lab manuals are provided to the students at the beginning of the course.
- Lab manuals contain lab rules, lab conduct, list of experiments and Lab evaluation sheet.
- For every experiment, its objectives, procedure and description of the apparatus are also provided in the lab manuals.

b. Are the resources available sufficient for the program.

- Lab engineers are responsible for updating the lab manuals, maintaining the inventory and ensuring that the required equipment is available for effectively conducting the experiments. All existing labs have sufficient resources in this regard ensuring smooth running of the labs.

Standard 3-2 Adequate Support Personnel for Labs

Indicate for each laboratory, support personnel, level of support, nature and extent of instructional support.

- All Biosciences labs of the Biosciences department have dedicated lab technicians and lab attendants who are qualified personal in their relevant fields. They are competent to address queries related to labs.
- Lab technicians are responsible for preparing/updating the lab manuals, maintaining the inventory and ensuring that the required equipment is available for effectively conducting the experiments.
- All Labs are air conditioned and internet facility is also being provided.
- An office desk is provided to Lab technicians with a dedicated PC.
- A notice board is displayed in each lab for putting up class schedules, marks distribution, code of conduct and health & safety measures.
- Instructional support includes white board and multimedia projector or OHP.
- The details of the lab technicians (support personnel) are given in the table below.

Designation of Lab Staff	Qualification	Name (For existing staff)
Lab Technicians	BE (Biomedical Engineering), MS (Applied Mathematics)	Engr. Nosheen Maqsood
Lab Technicians	M.Sc. Physiology	Ms. Kiran Fatima
Lab Technicians	M.Sc. Biotechnology	Ms. Hina Khan
Lab Attendants	HSC	Amar Lal
Lab Attendants	SSC	Vikash

Table 3.6: Labs technicians

Standard 3-3 Adequate Computing Infrastructure and facilities

a. Describe how the computing facilities support the computing component of your program.

- There is dedicated computing lab for the all the program at campus 100. Biosciences department uses this lab facility for the demonstration of Introduction to Computing and Bioinformatics. Computers are used to gather, store, analyze and integrate biological and genetic information which can then be applied to gene-based drug discovery and development.

- Total of 30 PCs are available in lab. Instructional support includes white board and multimedia projector. Printing (both black & color) and scanning facilities are also available.
- There are also six shared computing labs at SZABIST that Biosciences department utilizes for teaching of computing related courses.
- The program meets the HEC guidelines regarding the availability of classrooms, computer equipment and books/periodicals. These details have been provided in the table below:

No.	Particulars	Quantity
1	Servers	16
2	Desktop Computers	315
3	Video Camera with codec box an DSB	01
4	Color Scanners	03
5	Printers	08
6	Multimedia Projector	29

Table 3.7: Support Facilities

b. Are there any shortcomings in the computing infrastructure and facilities?

- Based on the information provided in Standard 3-3 (a), it can be seen that the computing infrastructure and facilities are adequate for the BS (Biosciences) Program.

CRITERION 4: STUDENT SUPPORT AND ADVISING

Standard 4-1	Sufficient Frequency of Course Offering
Standard 4-2	Effective Faculty / Student Interaction
Standard 4-3	Professional Advising and Counseling

Criterion 4 – Student Support and Advising

Biosciences department greatly emphasizes on the student support and advice. Dedicated counseling hours are provided by each faculty member to assist students in their learning. Workshops, seminars and industrial visits are regularly arranged for students with the aim of imparting practical and industrial knowledge, which would help the students in effectively pursuing their careers as professionals.

Standard 4-1 Sufficient Frequency of Course Offering

a. Provide the department's strategy for course offering.

- BS-Biosciences degree consists of 44 courses (five to six courses per semester) with a total of 135 credit Hours.
- All core courses are offered according to the set course plan which has been designed to conform to the HEC requirements.
- Elective courses are offered during sixth, seventh and eight semesters as per HEC guidelines.
- Apart from regular course offering, courses are also offered as open courses for those students who fail to pass those in the previous attempt and have pre-requisite course requirements to fulfill in order to be eligible for taking advanced courses in the subsequent semesters. An open course is offered provided minimum class strength is 15, and, faculty and class are available.

b. Explain how often core courses are offered.

- All core courses are offered according to the set course plan which has been designed to conform to the HEC requirements.

c. Explain how often elective courses are offered.

- Elective courses are offered during sixth, seventh and eight semesters as per HEC guidelines.

d. Explain how required courses outside the department are managed to be offered in sufficient number and frequency.

- All BS (Biosciences) courses are offered by the Biosciences Department. Only few courses like English, Statistics, Introduction to Computing, Islamiat and Pakistan Studies/Humanities, Research Methodology and Psychology are offered with other programs also. However, these courses are independently offered by Biosciences Department.

Standard 4-2 Effective Faculty / Student Interaction

Describe how you achieve effective student/faculty interaction in courses taught by more than one person such as two faculty members, a faculty member, and a teaching assistant or a lecturer.

- Several BS-Biosciences courses are 3 credits including lab sessions for which lab technicians are responsible. Lab technicians and faculty meet on daily basis to ensure that the theory and the practical application of theory are taught to students side by side and any queries by the students are also addressed in this daily meeting.
- Faculty also provides dedicated counseling hours for every course they teach to assist students in their learning.
- In order to facilitate students in understanding the course requirements, course outlines are provided to students beforehand which include the course objectives, learning outcomes, list of topics to be covered and the assessment criteria.

Standard 4-3 Professional Advising and Counseling

a. Describe how students are informed about program requirements.

- Students are informed about program requirements through advertisements, prospectus, brochures, student hand book, Facebook official page, admissions department, orientation, departmental webpage and ZABDESK.

b. Describe the advising system and indicate how its effectiveness is measured.

- Students are provided advising services through Executive development Centre (EDC), orientations, seminars, workshops, Program manager and faculty.
- EDC is dedicated to provide professional advice to the students regarding their careers and also facilitates the students in arranging job placements.
- Program manager is responsible for resolving student issues related to the Biosciences program. Students can directly contact the program manager for advice or general queries regarding the Biosciences program.
- For course related issues, students can seek advice from the concerned faculty during the designated counseling hours that each faculty provides to his/her students.
- Effectiveness of student counseling system is evaluated through Graduating student's survey by Institutional Research (IR) department.

c. Describe the student counseling system and how students get professional counseling; when necessary.

- Each faculty posts counseling hours on the door, so whenever a student has a problem in studying, he/she can visit the concerned faculty during the counseling hours or by appointment.
- In addition to academic related issues, Program Managers can also be approached for counseling regarding professional counseling, such as; industrial visits, internships and job placement.
- Students can seek professional advice about their careers from Executive development Centre (EDC). For this purpose, EDC facilitates arranging Internships for all students and acts as a liaison between the industry and the students. Furthermore, each semester, EDC contacts renowned national and multinational companies to conduct their employment tests, interviews and other on-campus recruitment activities to directly induct SZABIST graduates into their organizations. Additionally, at least once a year, a 'Job Fair' is held at campus where many leading companies are invited to explain their recruitment procedures. A graduate directory is also published each year.

d. Indicate if students have access to professional counseling; when necessary.

- Resources available to students for professional counseling are mentioned in Standard 4-3 (c).
- Biosciences department have SBS- SZABIST Biosciences Society which organizes professional counseling seminars for Biosciences students. Other course related workshops and guest speakers sessions are also organized by this society for students so that they can interact with the professionals working in various areas of Pakistan`s biosciences field.

e. Describe opportunities available for students to interact with practitioners, and to have membership in technical and professional societies

- Students interact with practitioners (professionals) in seminars and workshops arranged by the faculty, society like SBS and program manager.
- EDC is dedicated to enhance the opportunities for students by providing them advice about their professional careers and by facilitating in arranging job placements.
- Program manager also keeps students updated regarding biosciences job placements so that students can avail the opportunity to work with professionals in the industry.

CRITERION 5: PROCESS CONTROL

Standard 5-1	Admission Process
Standard 5-2	Registration and Students
Standard 5-3	Faculty Recruitment and Retention Process
Standard 5-4	Effective Teaching and Learning Process
Standard 5-5	Program Requirements Completion Process

Criterion 5 – Process Control

Standard 5-1 Admission Process

a. Describe the program admission criteria

SZABIST offers BS (Biosciences) admissions on annual basis. Candidates are required to have 50% marks in Intermediate (FSc) or 3 A Level passes in at least two subjects (Biology, Chemistry, and Physics).

b. Flow Chart of Admission Process

Figure 5.1 shows flow chart, that enlists details of admission process:

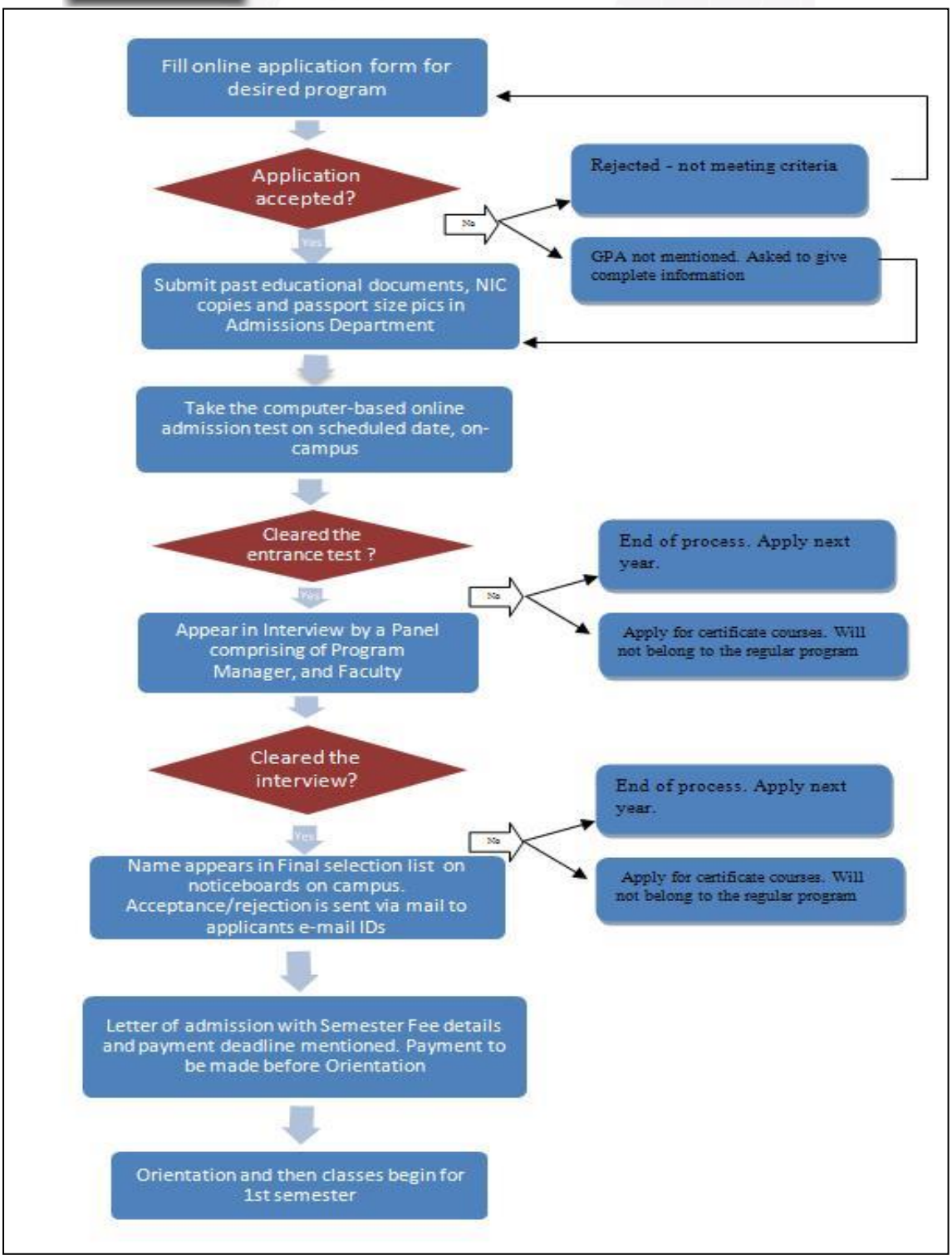


Figure 5.1: Admission Process

c. Describe policy regarding program / credit transfer

A maximum of up to 50% credits may be considered for transfer into BS-Biosciences program after admission into SZABIST from other HEC-recognized Degree Awarding Institutions, subject to the following:

- Courses are to have content similarity with course against which they are requested for being transferred.
- Minimum Grade B and above or minimum score of 80% was obtained in the course.
- Maximum credits that can be transferred are 50% of credits required for degree; which may be lower for certain degrees.
- Maximum time limit to transfer courses is within two years.
- The transferring student is required to fill the "Course Transfer" form (available at Reception) in consultation with the relevant Program Manager and submit with required documentation at the Admissions Office.

d. Indicate how frequently the admission criteria are evaluated and if the evaluated results are used to improve the process.

Admission Criteria and processes are reviewed in the Academic Heads meeting, which is held once in a month.

Some of the positive changes made in the Admission process during the last year are:

i. Extended office hours from 9am to 9pm to facilitate applicants during May and June.

ii. Storage facility for Admission department has been provided with plans to extend it further in the future.

iii. Multiple interview teams to review the applicants in timely manner.

Standard 5-2 registration and Students

a. Describe how students are registered in the program.

<u>Students Registration Process (Courses)</u>

Students are required to register through ZABDESK for the courses of study at the start of the semester. ZABDESK is an Online Registration System developed indigenously by the ZabSolutions.

The Academics department is responsible for disseminating information regarding registration process. For this purpose, Academics department circulates:

- An email to the committee i.e. e-group of staff and faculty involved in academic issues,
- SMS to student e-groups, and
- Registration Notices on notice boards all across campus,

Above mentioned email, SMS and Registration notice enlist essential details such as; ZABDESK registration process, last date for registration and the fine for late registration.

Course registration starts one week prior to commencement of semester and is closed one week after semester begins. In the 3rd week a list is generated of students attending courses and those attending courses with incomplete requisites. The same are asked to deregister from the incorrectly opted course.

Online registration is closed two weeks after semester begins and then manual registration is allowed from the main Academic's office upon payment of a late registration fine of Rs. 1000. The timelines for late registration is maintained after which no registration is allowed.

Students who are not registered are not allowed to attend classes. Those registered students who have remained absent for first three weeks are de-registered from the course during the fourth week.

Students Registration Process (Research Project)

The BS (Biosciences) program's students are required to complete a thesis (6 Credit Hours) during final year of their program of study. The registration process of thesis requires an approval of the thesis topic from the Program Committee and a prior consent of an approved research Advisor. Students are required to submit thesis registration form alongside with thesis proposal approved by the concerned Research Advisor latest by the end of third week of the semester. In case a student fails to submit an approved proposal, the student is asked to deregister from the thesis immediately. The university strictly adheres to its plagiarism policy, in evaluating the Thesis proposals, which allows a maximum of 10% similarity index.

Termination of Registration Process (Courses/Thesis)

The registration in any given course and thesis can be terminated in two ways enlisted below:

i. The student may request for withdrawal of a course up to second week of a semester, in which case student is dropped from the course.

ii. In case the student decided to withdraw the course after second week, the request has to be made prior to the 12th week through ZABDESK's Online Course

Withdrawal Process. In such case, a grade mark "W" i.e. no grade point is awarded to the student.

It should be noted that in either of above mentioned cases, the request for withdrawal has to be approved by the Academic Controller, Program Manager and Records Department.

b. Describe how students' academic progress is monitored and how their program of study is verified to adhere to the degree requirements.

Monitoring Student Progress

Following measures are taken to monitor student progress:

i. Attendance

Students are required to maintain 80% attendance throughout the semester in order to qualify to appear for the examinations. Two late arrivals are treated equal to one absence. In case of non-compliance of attendance rules, a letter grade "F" is assigned in the course.

ii. Midterm and Final Examinations

A mid-term exam is administered in the 7^{th} week of academic session. The mid-term exams account for 20-30 per cent of total marks. Duration of midterm exam is 2 hours. Final exam is administered in the 16^{th} - 17^{th} weeks of academic session. The final exam is of three hours duration, and account for 40-50% of total marks. It should be noted that in courses with labs, lab midterm and final examinations are held separately in 8^{th} and 16^{th} week respectively.

Furthermore, teaching is conducted in an interactive manner i.e. student participation is encouraged to optimize student's learning. The lectures include structured presentations (for introduction and overview of topics) but students are encouraged to complement the lecture materials by reading recommended and topic's relevant books. The reason for providing learning materials in a more flexible manner is to encourage students to take ownership and control of their learning. Generally, during any given course, students are assigned with a coursework or project; this will provide students' a chance to demonstrate their knowledge gained during this course. Furthermore, numbers of quizzes are taken to see how well the students have learned concepts, and, have developed analytical and graphical problem solving skills.

In summary, assessment includes quizzes, course work or class project, lab work (if applicable) and examinations. In general, the weightages are as follows:

- Class Quizzes/Midterm: 20% - 30%
- Lab/Project 20% - 30%
- Final Exam: 40% - 50%

Passing Grades

For each course minimum passing grade is "C -". For any given course, student with "D" i.e. repeat grade or "F" i.e. fail grade must take up and clear that particular course in future.

Probation &Dismissal on Academic Grounds

As per HEC guidelines, if a student fails to complete the degree requirements within seven years, the admission is cancelled.

c. Indicate how frequently the process of registration and monitoring are evaluated and if the evaluation results are used to improve the process.

The Student Registration and Student Progress Monitoring processes are regularly reviewed in ZABDESK through Program Manager and Academic Controllers.

For regular monitoring of BS (Biosciences) and all other academic programs, an Academic Heads meeting is held once a month. The meeting is chaired by the Vice-President Academics, all Program Managers, Academic and Examinations Controller, and other department heads. Any necessary amendment in policy and resolving of individual cases is carried out at these meetings.

Due to this timely review of the Academic issues at all levels, the university has been able to achieve efficiency in admission, registration and examination processes at all levels resulting in accuracy in admission screening process, timely registration and attendance sheets availability, class scheduling, course and class monitoring etc.

Standard 5-3 Faculty Recruitment and Retention Process

a. Describe the process used to ensure that highly qualified faculty is recruited to the program

Faculty Recruitment Process

The faculty recruitment process is initiated by the Vice President Academics, who in consultation with Head of Department and program managers identify faculty required for respective department. The human resource department (HRD) of SZABIST then advertises the faculty positions through leading newspapers in light of the faculty requirements communicated by the Vice President, and SZABIST website for online applicants. HRD sets up a departmental committee in consultation with the President and Vice President, for short listing of the suitable candidates and then sends interview calls. Selection committee, consisting of the Dean of Program, Program Manager and senior faculty conducts the interview of shortlisted candidates and further shortlists the suitable candidates for demo lectures. The demo lecture is mandatory for all selected candidates. At the end of the demo lecture and based on the evaluation criteria, faculty is hired and HRD sends them the offer letter for faculty position accordingly.

b. Flow Chart of Faculty Recruitment Process

Figure 5.2 shows flow chart, that enlists details of faculty recruitment process:

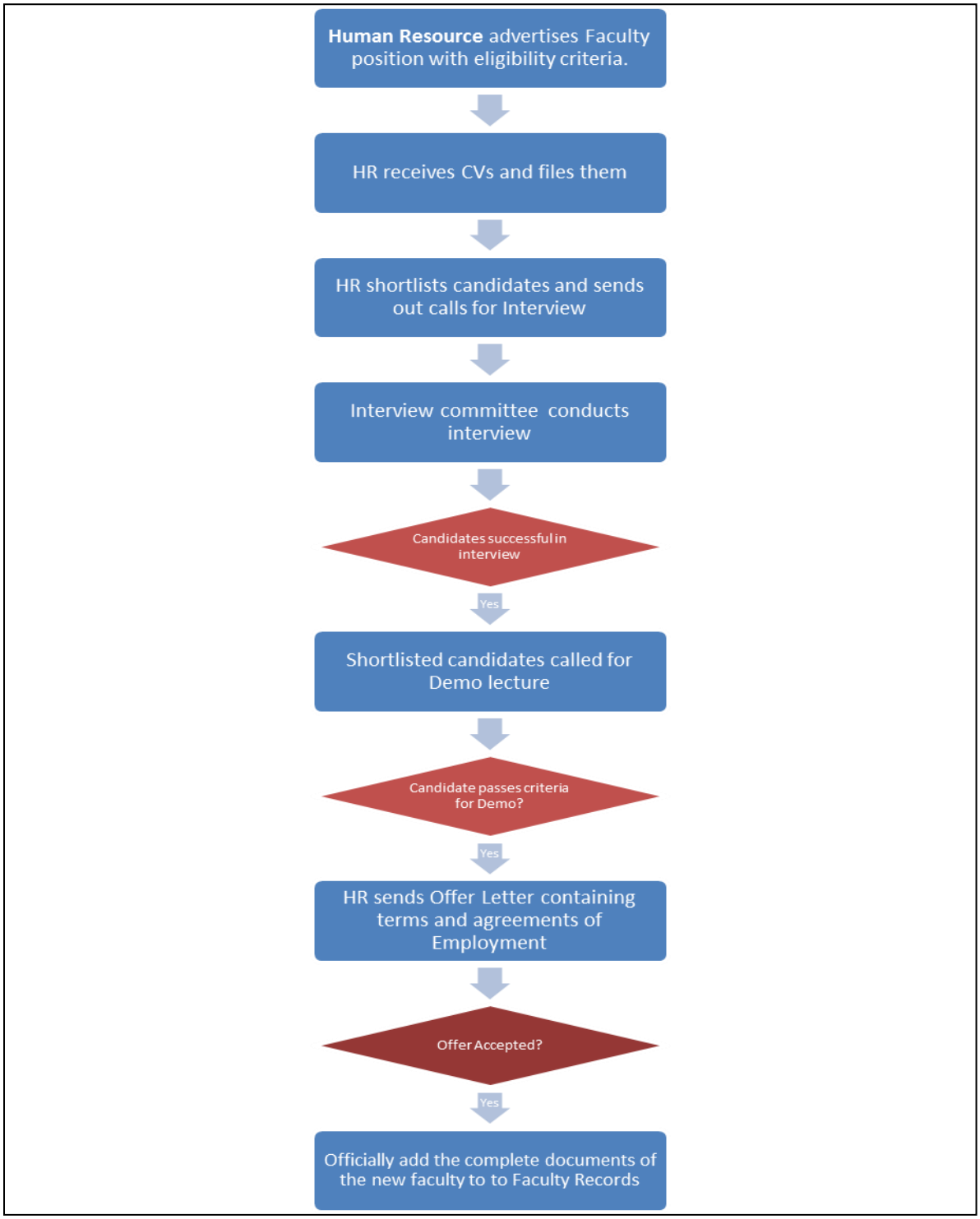


Figure 5.2 Faculty Recruitment Process

c. Indicate methods used to retain excellent faculty members.

Academic committee evaluates the faculty every semester with the support of HR and academics departments. If the evaluation of the faculty is satisfactory, accordingly they are considered as confirmed full time faculty.

SZABIST offers the following valuable intrinsic and extrinsic incentives and rewards for faculty retention. The offerings and benefits have been developed over a number of years based on the careful need assessment and competition being faced by the university from a number of different employers in the field:

i. Highly competitive salary packages.
ii. Flexible working hours within a given work week.
iii. Continuing Education benefit from day one to join MS/Ph.D. program at SZABIST.
iv. Opportunity to get promoted and salary revision based on performance review, during the course of studies.
v. Car Loan Financing.
vi. Provident fund.
vii. Annual Bonus.
viii. Annual raise to counter inflationary effect.
ix. Performance Increment policy.
x. Capacity Development programs/workshops.
xi. Fully funded trip for presenting own research paper at any Research Conference within Pakistan (once in a year).
xii. Partially funded trip to an international research conference to present a research paper, (once in 2 years).
xiii. Publication honorariums for publication of articles and research papers,
xiv. Thesis and dissertation advisor / committee member honorarium and much more.

d. Indicate how evaluation and promotion processes are in line with institution mission statement

The Faculty Evaluation and Promotion Processes are duly in line with SZABIST's Mission Statement. In order to support the mission, Dean/Heads of departments evaluate their faculty members on annual basis. The faculty member is evaluated in terms of their

teaching, student's feedback, research work, publications, arranging seminars/guest speaker sessions, attending conferences and other administrative work.

The evaluation results are further used as tools for rewarding those faculty members, who are engaged in giving quality education and sharing industry's experience with the students to prepare them for competitive job industry. This reward is made in the form of merit increment, which is in addition to fixed annual increment of 10%. The faculty members who are well qualified but have not been able to achieve the goals assigned by their respective Dean/Heads of the departments are provided with further training to achieve required goals.

It should be noted all promotion are made in line with HEC guidelines, and for this purpose faculty members are advised to submit their documents to Promotion committee through HR department. Meeting of promotion committee takes place twice a year; generally in the months of June and December respectively.

Hence, Evaluation and promotion processes at SZABIST has set up the foundation of achieving the targets as set in the Mission statement, as it helps in promotion, appreciation, and training, proper counseling of faculty members to prepare them for producing high quality graduates nationally and internationally.

e. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process

The improvements in the faculty evaluation and promotion processes are an outcome of the annual joint meeting of Executive Committee and the Human Resource Department. The Evaluations of these processes begin at the end of March and the procedure is well-established. On the basis of this process continuous improvements have been made in the past year in the official procedure of Performance Appraisal. Appraisal forms have been improved to get a deep insight into faculty and staff's work performance and motivation factors. On the basis of this review, the HR department is considering the training of employees and the appraisers, to provide them with the understanding of evaluation of this process. By having the better understanding, both the appraisers and employee would be able to use the process for the self-betterment and overall goals.

The faculty evaluations results are reviewed and the Executive Committee takes the final decision on promotions.

Standard 5-4 Effective Teaching and Learning Process

a. Describe the process and procedures used to ensure that teaching and delivery of course material is effective and focus on students learning

Following measures are taken to ensure that Courses' Learning outcomes are met:

- To monitor as how effective the course has been taught, a course file is maintained by respective faculty for each course. A course file includes all relevant data (such as given below) which could become the basis of evaluation.
    - Lecture breakdown for entire semester.
    - Listing of textbook and other reference books pertaining to the course.
    - Record of lecture progress, including record of make-up classes for any un-scheduled holiday.
    - Record of class attendance.
    - Teaching notes and sample of practical printouts
    - Schedule of monthly / mid-term tests and final examination.
    - Breakdown of laboratory experiments pertaining to the course and record of their successful conduct.
    - Samples of best, worst and average answer sheets, along with the question paper of each exam and quiz.
    - Solution along with the question paper of each exam and quiz by faculty.
    - Recommendation and suggestions related to the course for the next session.
- To provide an environment that is conducive to learning, class size is kept to only 30-35 students. This allows our faculty to give each child more attention and tailored instruction and creates an environment where students are actively participating and engaged with the course material.
- Furthermore, all class rooms are air-conditioned and equipped with overhead projectors, wall-mounted screens, white boards and multi-media projectors, PCs and internet connectivity, to facilitate the teaching and learning process the facilities create a pleasant environment.
- Course related interactive lectures are regularly augmented by co-curricular activities such as:
    i. Laboratory experiments for development of practical skills through hands-on experiences, operation of modern equipment and some field experience, when required.
    ii. Group Design projects
    iii. Guest speaker sessions
    iv. Workshops

b. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process

Keeping in mind that course assessment benefits students when it leads to improved learning of the course content, regular assessment of course material and teaching is carried out in following manner:

Course material's assessment is carried out through evaluation of course file in a meeting between concerned faculty member and Head of Department. This provides one of the few opportunities for faculty to discuss course content with each other and, based on the results of an assessment; determine how they can improve student learning in the course. Using assessment results as evidence, they might decide to:

- Revise the course outcomes,
- Obtain more consistency in large multi-section courses, through increase contact with adjunct faculty when required,
- Explore active learning strategies and other teaching methods,
- Explore technological enhancements (labs, equipment, CD tutorial, etc.), using the assessment evidence to support a request for increased funding,
- Conduct a workshop for instructors.

Teaching assessment is carried out in the 6th week of each semester. The assessment is done online by the students through a questionnaire.

The Vice President Academics reviews all the assessments and gives his comments on all the evaluations and then forwards them to Program Manager.

An evaluation that obtains less than 60% marks is deemed poor. In such case, the Program Manger informs respective faculty member about their low evaluation score. Program Manager then investigates the reasons for poor evaluation through meetings with concerned faculty member and students. In light of these meeting, Program Manager Chalks up a plan to overcome any shortcoming causing poor evaluation, this plan is then handed over to faculty member for implementation.

After two weeks faculty members are reevaluated, unless the score is improved, their case is taken to the Vice President Academics and his verdict stands.

Standard 5-5 Program Requirements Completion Process

a. Describe the procedure used to ensure that graduates meet the program requirements

To ensure that graduates meet the program requirements prior to awarding of Degree, Records department verifies that student have achieved following essential requirement for Completion of BS (Biosciences) Degree:

- 135 Credit Hours (44 courses),
- Six week internship,
- Research project
- Duration of study is within allowable maximum duration, which is seven years.

Without completing above mentioned requirements and clearance of financial dues a student will NOT be issued the degree.

b. Describe when this procedure is evaluated and whether the results of this evaluation are used to improve the process

The evaluation of this process is done on regular basis through multiple forums i.e. the monthly Academic Heads meeting, the bi-annual Academic Council meeting and the bi-annual meeting of the Board of Studies. The processes are regularly discussed and evaluation of the procedures is done to ensure completeness of the BS (Biosciences) Degree program requirements according to Higher Education Commission (HEC) guidelines. These discussions often lead to improvements and amendments in the relevant processes and procedures.

CRITERION 6: FACULTY

Standard 6-1	Program Faculty Qualifications and Number
Standard 6-2	Current Faculty, Scholarly Activities & Development
Standard 6-3	Faculty Motivation and Job Satisfaction

Criterion 6 – Faculty

Standard 6-1 Program Faculty Qualification and Number

a. Faculty resumes in accordance with the format

Launched.

b. Faculty distribution by program's areas[13]

List of Permanent Faculty members:

S. No	Names	Area of Specialization	Taught Courses
1	Dr. Kashif Ali	Systems Biology	Advance Biochemical Techniques/Techniques in Biotechnology Genetic Engineering
2	Dr. Sarosh Salman	Health Sciences	Pathology Bioethics
3	Dr. Hammad Afzal Kayani	Biotechnology	Cell Biology + Lab Research Methodology
4	Dr. Syed Zulfiqar Naqvi	Biochemistry	Bioinformatics Statistics
5	Mr. Shahab Mehmood	Pharmacy	Physiology Pharmacology Toxicology
6	Mr. Shahbaz Khan	Biotechnology	Hematology Advanced Biotechnology
7	Mr. Mujtaba Babar	Biosciences	Biochemistry Neurochemistry Nutrition and Dietetics
8	Ms. Asma Bashir	Microbiology	Introduction to Microbiology Advanced Microbiology Lab Management
9	Ms. Farah Ashraf	Biotechnology	Immunology Biotechnology Animal and Plant and Tissue Culture Molecular Biology

Table 6.1a: Faculty distribution by program's areas[14]

[13] The source of information is HR and Head of Department.
[14] Table 6.1a of PT Report is Table 4.6 (Faculty Distribution by Program's Areas) of AT Report

List of Adjunct Faculty members (2015)

S. No.	Names	Area of Specialization	Taught Course
1	Aneela	Psychologist	Psychology
2	Muhammad Khawar Rehmani	Computing	ITC
3	Abdul Qader Sukkurwala	Immunology	Endocrinology
4	Muhammad Irfan Khan	Pharmacy	Business Management
5	Muhammad Noman Syed	Biochemistry	Biophysics
6	Muhammad Noman Syed	Biochemistry	Environmental Sciences
7	Shaukat Ali	Microbiology	Fermentation Technology
8	Zainab Hassan	Public Health	Epidemiology

Table 6.1b: Faculty distribution by program's areas[15]

Standard 6-2 Current Faculty Scholarly Activities & Development

a. Describe the criteria for faculty to be deemed current in the discipline and based on these criteria and information in the faculty member's resumes, what percentage of them is current. The criteria should be developed by the department.

In general, a faculty is termed current, if he/she is taking a full load of courses, that is, four courses per semester. However, this load is subject to change, based on the discretion of the Vice President (Academics) to accommodate other institutional activities, such as research. Currently, the Department of Mechatronics has 7 full-time faculty members including two PhDs, and five lab engineers.

Moreover, details of workshops and seminars are given below:

[15] Table 6.1b of PT Report is Table 4.6 (Faculty Distribution by Program's Areas) of AT Report

S. No.	*Faculty Name*	*Qualification*	*Workshops/Seminars/Trainings/Industrial visits*
1	Dr. Kashif Ali	Ph.D (Leiden University, The Netherlands)	• Participated in International Workshop on Modern Techniques in Structural Biology on December 13-14. 2013 at ICCBS, UoK, Karachi • Participated in Training workshop on "Patentability: Determining what can be Patented" on February 10, 2015 at CIIT, Islamabad.
2	Dr. Sarosh Salman	MBA (DUHS) & MBBS (KU)	
3	Dr. Hammad Afzal Kayani	Ph.D (University of Karachi)	
4	Dr. Syed Zulfiqar Naqvi	Ph.D(University of Karachi)	
5	Mr. Shahab Mehmood	M.Phil (University of Karachi)	
6	Mr. Shahbaz Khan	PhD (In Progress) (University of Verona, Italy) MS (University of Essex)	
7	Mr. Mujtaba Babar	MS (COMSATS)	
8	Ms. Asma Bashir	M.Sc (University of Karachi)	• Participated in Ninth International Biennial Conference of Pakistan Society of Microbiology, held during January 28 – 31, 2013 at ICCBS, HEJ Research Institute, University of Karachi, Pakistan. • Oral Presentation: Ms. Asma Bashir, Lecturer presented her research paper "Thrombolytic potential of aqueous and methanolic crude extracts of Camiellia sinensis (Green tea): In vitro study in BIOMICRO WORLD 2013 held on 2nd -4th October, 2013 at Madrid, Spain. • Oral Presentation: Ms. Asma Bashir, Lecturer presented her research paper

			Participated in a conference as an oral presenter in European Society for Pediatric Infectious Diseases (ESPID) 2014 held on 6th -4th May, 2014 at Dublin, Ireland. • Poster Presentation on Microbiological analysis and isolation of antibiotic resistant bacteria from Gharo water samples (Karachi-Pakistan) in Ninth International Biennial Conference of Pakistan Society of Microbiology, held during at ICCBS, HEJ Research Institute, University of Karachi, Pakistan.
9	Ms. Farah Ashraf	M.Sc (University of Karachi)	• Participated in Ninth International Biennial Conference of Pakistan Society of Microbiology, held during January 28 – 31, 2013 at ICCBS, HEJ Research Institute, University of Karachi, Pakistan. • Participated in "International Workshop Bioinformatics Tools in Structural Biology" held during August 14 – 16, 2014 at ICCBS, University of Karachi, Pakistan.

Table 6.2: Faculty information

b. Describe the means for ensuring that full-time faculty members have sufficient time for scholarly and professional development.

Faculty members are encouraged to actively participate in national / international conferences, seminars and workshops. SZABIST operated workshops and seminars are free for faculty, while facility of financial support for national activities is also available.

c. Describe existing faculty development programs at the departmental and university level. Demonstrate their effectiveness in achieving faculty development.

Through active research they continue to update their skills to ensure that they know about contemporary and future challenges.

d. Indicate how frequently faculty programs are evaluated and if the evaluation results are used for improvement.

Every month an academic heads meeting that includes the heads of department/deans and coordinators of all programs is held. The meeting is presided over by the vice president of academics. Also, regular meetings are scheduled between the faculty and program coordinators along with the head of the department to address academic and

administrative issues. This ensures that the program runs smoothly and without any glitches. Furthermore, a faculty evaluation is carried out for each course which is based on feedback from the students. It is in light of this feedback that the Program Manager interacts with the faculty to ensure an optimum learning experience for the student.

Standard 6-3 Faculty Motivation and Job Satisfaction

a. Describe programs and processes in place for faculty motivation.

The following elements are routinely incorporated to measure faculty motivation:

- Cordial working environment
- Flexible faculty timings
- Annual and causal leaves
- Performance-based increment and annual bonus
- Car loan facility
- Continuing education
- Annual picnics and social gatherings

b. Indicate how effective these programs are

Programs are effective as:

- Employees get the opportunity of personal and professional growth by acquiring education free of cost.
- The 50% concession of fee to children of employees gives employees the opportunity to provide their children with quality education at an affordable price.
- The flexible timing enables the employees to manage their time on campus with the time of their classes.
- The performance based increments and an annual bonus motivates employees to work effectively and efficiently.

c. Obtain faculty input using faculty survey on programs for faculty motivation and job satisfaction.

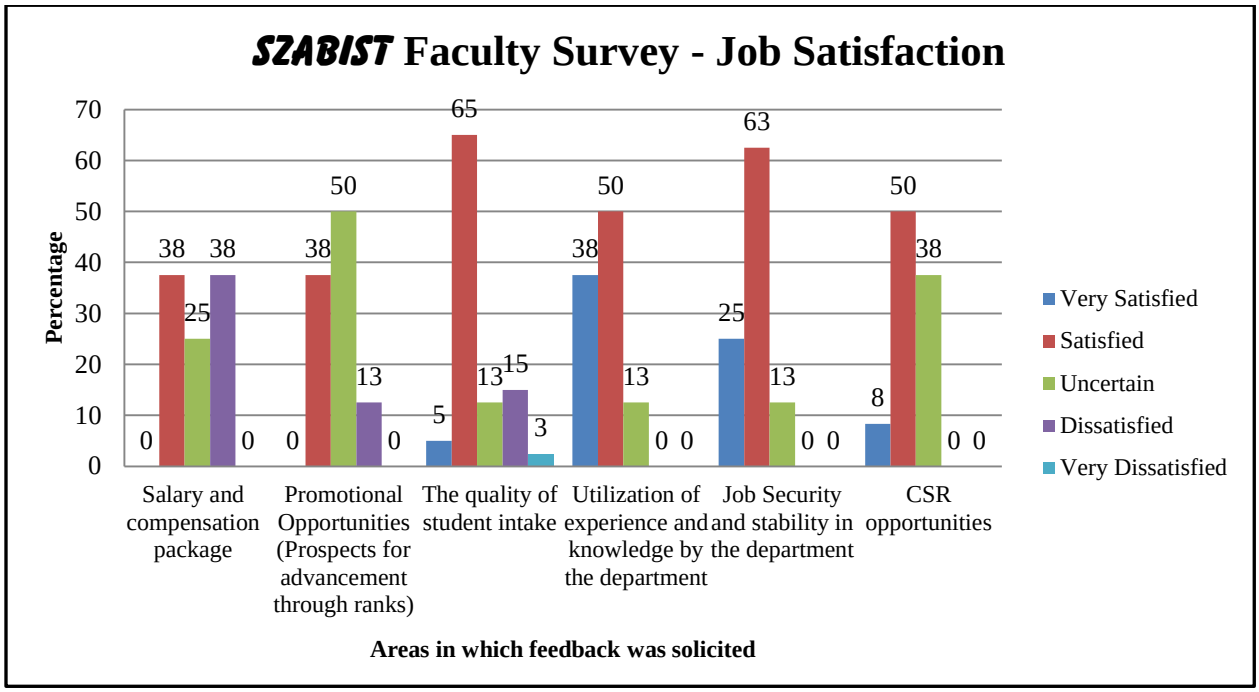


Figure 6.1

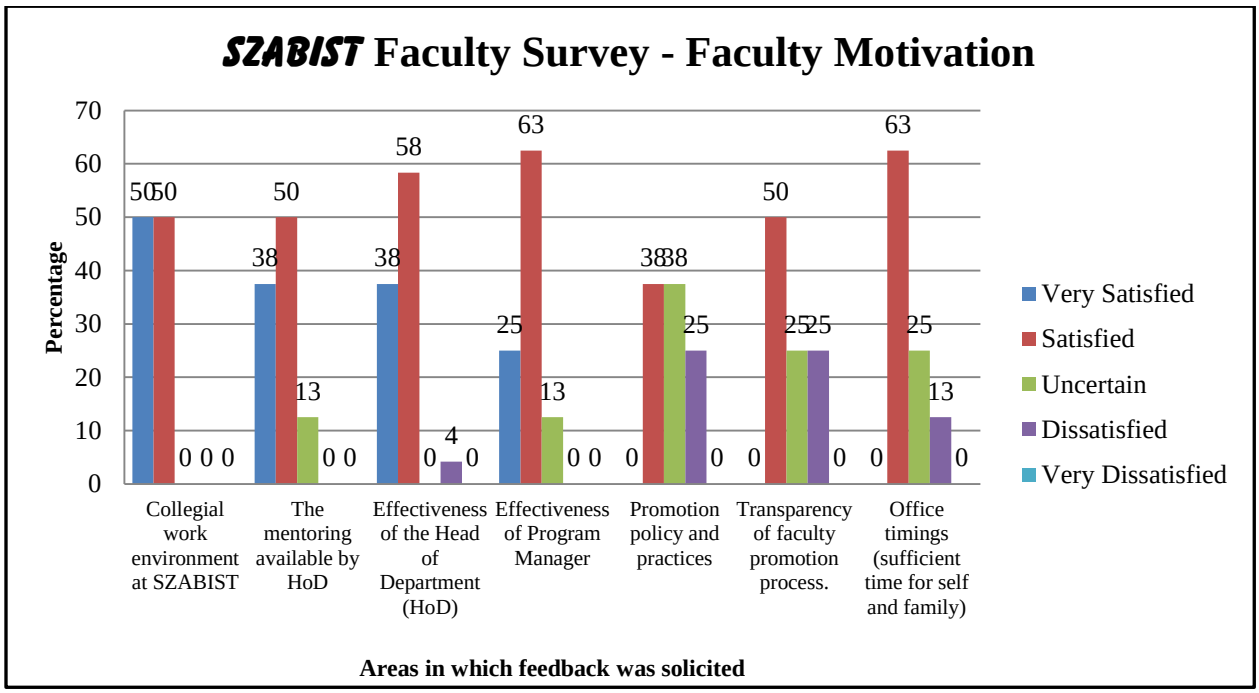


Figure 6.2

CRITERION 7: INSTITUTIONAL FACILITIES

Standard 7-1	New Trends in Learning (e.g. E-Learning)
Standard 7-2	Library Collections & Staff
Standard 7-3	Class-rooms & Offices Adequacy

Criterion 7 – Institutional Facilities

Standard 7-1 New Trends in Learning (e.g. E-Learning)

a. Describe infrastructure and facilities that support new trends in learning.[16]

E-learning infrastructure is in place and we have robust program of E-learning and intend to continue E-learning in future.

No.	Particulars	Quantity
1	Servers	16
2	Desktop Computers	296
3	Video Conferencing Equipment	1
4	Color Scanners	3
5	Printers	8
6	Multimedia Projectors	29
7	Local Area Network with 250+ nodes, CISCO 2600 Series Routers, CISCO 2950 series of switches, Laser Printers, Color Printers, Finger Print Device, Multimedia Equipment and a rich Software Library.	

Table 7.1: Support Facilities

b. Indicate how adequate the facilities are

We have state-of-the-art facilities at our campus to meet present and future demand Online University:

Application server

Intel Xeon dual processor 3.0 GHz, 2GB ECC RAM, 72GB HDD, RAID controller 0 and 1, DVD multi-burner for data backup. Installed Windows server 2003 as an operating system with e-learning application software for student and faculty access through the Internet.

Storage server

Intel Xeon dual processor 3.0 GHz, 2GB ECC RAM, 216GB HDD, RAID controller 0, 1 and 5 for data storage, and DVD multi-burner for data backup. Installed Windows Server 2003, which is running data storage applications for students and faculty records.

[16] The source of information is IT Department.

Both machines are rack mounted and installed with Pix-Security firewall to secure the e-learning application software for reliable access to all users.

Standard 7-2 Library Collection & Staff[17]

a. Describe the adequacy of library's technical collection.

SZABIST library is equipped with ZABLIS, the most modern library automated system. It contains a rich collection of books, research projects / papers, thesis and dissertations. The library subscribes to a number of journals and magazines to update students' knowledge on current development taking place nationally and internationally. Currently, SZABIST has a total of 13,528 physical books / reports/ thesis, etc. In addition to this, SZABIST also has a collection of 4,300 e-books in e-library and a total of 8,242 on-line journals.

The library is also linked to full-text online academic journals through the HEC digital library access. In addition, the library subscribes to a number of Digital on-line libraries (EBSCOHOST, IEEE, and ACM) through which students can access an unlimited number of journals and magazines.

Library Resources			
No.	**Particulars**	**Quantity**	
1	**Printed Form**		
	A. Bioscience Books	**113**	
	B. Reports	**06**	
	i. Independent Study		0
	ii. Project		6
	iii. Thesis		0
	C. Journal/Magazines (Subscribed)	**50**	
	D. Newspapers (Daily)	**9**	
2	**Digital Form**		
	A. E-Books	**4,300**	
	B. CD's	**734**	
	i. Books Related		
	ii. General		
	C. Audio/Video Cassettes	**0**	
	D. Journal/Magazines (Online)	**8,242**	
	E. Access to Online Journals		
	I. HEC Digital Library	**Yes**	
	• ***ASTM***	**Yes**	

[17] The source of information is Librarian.

	• ***EBRARY***	**Yes**	
	• ***IET Digital library***	**Yes**	
	• ***Institute for operations research and the management sciences***	**Yes**	
	• ***McGraw Hill Collections***	**Yes**	
	• ***Project Muse***	**Yes**	
	• ***Springer link***	**Yes**	
	• ***World bank e-library***	**Yes**	
	• ***Wiley-Blackwell journals***	**Yes**	
	• ***University of Chicago Press***	**Yes**	
	II. EBSCOHOST	**Yes**	
	III. ACM Library	**Yes**	
	IV. Emerald insight	**Yes**	
	V. JSTOR	**Yes**	
	VI. Taylor & Francis Journals	**Yes**	
	VII. Open Access	**Yes**	

Table 7.2: Library Resources

b. Describe the support rendered by the library

Following are the ways in which the library staff supports the faculty and students

i. Respond to daily-on-site reissue requests for books.

ii. Train library users to effectively search the Library catalogue, Internet and other electronic resources.

iii. Book and other reading material lending services

iv. Receiving and persevering all reading material

v. Information access in digital form

vi. To search newly available books in market and on internet and make a list of required ones'.

Library Staff Timing

Shifts	Timeslots	Personnel (s)
Morning	8:00 a.m. -- 4:00 p.m.	6
Evening	2:00 p.m. -- 10:00 p.m.	4

Table 7.3: Library Staff Timing

Standard 7-3 Classrooms & Offices Adequacy

a. Describe the adequacy of the classrooms

Class rooms are well equipped with

- Multimedia projectors,
- PCs' with internet connections,
- Sound systems
- Uninterruptible Power Supply (UPS)
- Air Conditioners/ Fans,
- Surveillance Cameras Chairs,
- Rostrums,
- White Board,
- Pc Trollies,
- Tube Lights,
- Blinds,
- Wall Clocks and
- Other necessary stationeries and things that are required by faculty members that add value in teaching.

b. Describe the adequacy of faculty offices.

Rooms are allocated for permanent and visiting faculties where latest Intel Core, i3, i5 and i7 PCs are available with full Internet facilities, printers, landline extensions, Wi-Fi, digital library access, split air conditioners, shelves, UPS, display boards to display their office schedules, and other necessary stationeries and equipment. It is essential for all the faculty members to display their semester schedule on their doors to inform students of the faculty's availability.

CRITERION 8: INSTITUTIONAL SUPPORT

Standard 8-1	Support and Financial Resources
Standard 8-2	Number and Quality of GSs, Students
Standard 8-3	Financial Support for Library and Computing Facilities

Criterion 8 – Institutional Support

Standard 8-1 Support and Financial Resources

a. Describe how your program meets this standard.

SZABIST hires permanent faculty on handsome salary packages, which includes basic salary, house rent, utility, medical, and convince allowance.

On annual basis around 10 to 15 percent on basic salary increment is being added and after every year a bonus is being awarded to every employee in the month of March.

Also on semester/Annual progress report and recommendation on excellent work or achievement for SZABIST their salary will be increased or some award in the shape of money being awarded to him or her. After three years of successful teaching in SZABIST, SZABIST will provide them loan.

Also after being permanent faculty SZABIST offers them to continue with their higher studies according to their needs without any payment but they have to sign an agreement to serve the institution for five years after completion of their respective degree.

b. Describe the level of adequacy of secretarial support, technical staff and office equipment.

There are dedicated academic staff members who provide secretarial and technical support to the Mechatronics department. The support includes:

- Class Management
- Attendance Sheet Circulation
- Time Table Maintenance
- Schedule Circulation

Each faculty member has a computer and internet facility at his/her disposal. The facilities which each faculty member is being been provided with include: stationery, writing material, phone line, proper room (shared) with adequate seating arrangement and photocopying & printing facility.

For visiting faculty an equipped adjunct faculty rooms are available.

Standard 8-2 Number and Quality of GSs, RAs, Ph.D. Students[18]

a. Provide the number of graduate students for the last three years

[18] The sources of information are ZABDESK and HR Department.

Number of Graduate Students

Year	No. of Graduates
2015	**16**

Table 8.1: Number of Graduate Students

b. Provide the faculty graduate student ratio

Graduates: Faculty Ratio*

Year	Graduates: Fulltime Faculty Ratio
2015	1.37:1

Table 8.2a: Graduate Faculty Ratio

Number of Faculty

Particulars	Faculty
	2015
Total Number of Faculty	**12**
Full Time faculty	8
Adjunct Faculty**,***	4

Table 8.2b: Number of Faculty

a. * Graduates / Faculty of BS-Biosciences program only
b. ** 3 Adjunct faculty is equal to 1 permanent faculty
c. *** Adjunct faculty has been counted as per person not according to number of courses taught by them

Standard 8-3 Financial Support for Library and Computing Facilities

a. Describe the resources available for the library[19]

Particulars	Budgetary Allocation (Rupees)		
	2012-13	**2013-14**	**2014-15**
Library	132,500	252,000	579,300

Table 8.3: Resources available for the library

[19] The information is provided by Finance Department

b. Describe the resources available for laboratories

Follow table enlist summary of financial budget for departmental laboratories.

Particulars	Budgetary Allocation (Rupees)		
	2012-13	2013-14	2014-15
Laboratories	1,250,000	1,600,500	2,649,000

Table 8.4: Resources available for the library

Furthermore, details of the resources available for the labs are provided in the table below.

Name of Lab.	No. of Work Stations	Name of equipment/ workstation	Strength of Students per Work Station	Designation of Lab Staff responsible for the lab	Name of Lab Staff
Electronics Lab	15	Digital Oscilloscopes (15), Function generators (15), Digital Logic Trainers (15), Logic Probes (30), Digital Millimeters (40), DC Dual Power supplies (15), Bread Boards (36), Patch boards (60), Desktop PCs (3), Resistors. Capacitors, inductors, LED's potentiometers, Transformers, AC supplies, relays, diodes, Zener, Op-Amps, transistors, Thyristors, FET's , MOSFET, CMOS, Soldering Irons,	2	Lab Engineer	Engr. Ismail Mansoor
Engineering Drawing	30	Drawing Board (30)	1	Lab Engineer	Engr. Sulaiman

Studio					Dawood
Engineering Physics Lab	15	Fundamentals of Statics, Vernier Caliper (12), Digital Vernier Caliper (2), Screw Gauge (12), Inclined Plane with different weights (2), Pendulum Bars (4), Photoelectric trainer (4), Frequency Generator(6), Oscilloscope (6), Solenoid Prism (2), Spectrometer (2) , Sodium Lamp (6), Large glass tubes (6) , Set of small steel ball bearings of five different diameters (6), Stop watch (12), Meter scale (6), Diffraction Grating Plate (6), DC power supplies (2), Resistors, capacitors, Inductors.	2	Lab Engineer	Engr. Usman Tariq
Engineering Workshop	10	Workbench with vices and jigs for wood working (12), Metal work stations (12), Hammer, Wooden Hammer, Planner, Chiesel (Flat)(0.75", 1", 1.5"), Chiesel (Round), T Angle scale, Angle Scale,	3	Lecturer & Lab Technician	Engr. Tanzila Younas & Mr. Tanveer Ahmed

		Sand Paper, Rough Cut File, Double Cut File, Drop forge, Liner, Delta Band Saw, Measuring Tape, Electric Power Saw Machine, Electric Planner, Electric Finisher, Drill Machine, Assorted screws, nuts and bolts, Set square, Wood glue, Wood filler, Wood varnish, Thinners, Workbench with vices and jigs for Metal working (12), hammers, Vernier scale, screw gauge, cutter, Letter and Number Stamps, Drill Bit Sets, Chisel and scribers, Protractors, Electric welding facility, Lathe Machine, Milling Machine.			
Design and Simulation Lab	30	Desktop PCs, CAD/CAM softwares, Electronic design softwares, Printers.	2	Lab Engineer	Engr. Sarmad Hameed
Instrumentation and Control Lab	15	Elecrtomechnical Trainers (3), Digital Multimeter , Digital	2 - 3	Lab Engineer	Engr. Moez Ul Hassan

		Tachometer , Auto Transformer , Single Phase Transformer , Rheostat:1.5A & 0.8A , AC Watt Meter UPF, AC Watt Meter LPF , SPST Knife switches, DC Motor (3HP), DC Motor (5HP), Generator. Instrumentation trainer (5) a) Photo Transistor/Interrupter & Hall Effect Sensor b) Reed Switch & Thermistor & Mercury Switch Sensor c) Limit Switch & Vibration Switch Sensor d) Temperature & Humidity Sensor e) Infrared TX/ RX & Ultrasonic TX/ RX Sensor f) Pressure & Strain Gauge Sensor g) Hall Current & Proximity Sensor h) RTD (PT-100) Sensor i) Level (Water) Sensor j) LVDT Sensor k) Rotation Angle Sensor l) Ethanol Sensor			

		m) Phtovoltaic sensor n) V/F Converter o) F/V Converter p) Optical Fibre Sensor NI Educational Laboratory Base Unit (4), NI DC Motor Stand (3), NI Inverted Pendulum Stand (1), NI Process Control Trainer (3), NI Vertical Take-Off and Landing Stand (1), Industrial Electronic Trainers (5) covering following experiments. a. UJT b. PUT c. SCR d. SCS e. UJT & PUT Trigger SCR f. SCR Control DC Motor g. DIAC h. TRIAC i. Automatic Control Lamp, j. Temperature Radio k. Photo-Couple and Touch Control l. Over/Under Voltage Breaker m. TRIAC Liquid Level &			

		n. IC Timer Switch o. Digital Signal Driver & p. Zero-Voltage Switch q. Zero-Voltage Switch r. SCR Converter s. SCR Rectifier Circuit t. JFET/MOSFET Characteristic & MOSFET Speed Control u. IGBT Characteristic & IGBT Speed Control			
Thermo Fluids Lab	10	Pressure measurement Bench, Temperature measurement Bench, Boyle's Law apparatus, Gay Lussac's Law apparatus, 4 and 2 Stroke Petrol Engine, Pelton Turbine Demonstrator, Reaction Turbine Demonstrator. Properties of Fluids and Hydrostatics Bench, Bernoulli's Theorem demonstration Unit, Reynolds theorem demonstration unit, Fluid Friction apparatus, Pipe Friction Apparatus, Energy Losses In Bends and Fittings,	3	Lab Engineer	Engr. Sulaiman Dawood

		Hydraulic Benches.			
Mechanics Lab	10	Force and Moment apparatus, Hooke's law apparatus, Beam Apparatus, Torsion testing apparatus, Mini Tensile Testing Machine. Crank and Connecting Rod apparatus , Four Bar Chain, Whitworth Quick Return Mechanism, Gear Trains apparatus, Wheel and Axle apparatus, Wheel and Differential Axle, Governor apparatus, Spur Gear Lifting Cut Model ,Worm and Wheel apparatus, Flywheel apparatus, Static and Dynamic Balancing, Screw Jack apparatus, Epicyclic Gear apparatus, Bevel Helical Gear Cut Model , Rack and Pinion, Bevel Gear, Cam and Follower, Constant Velocity Joint.	3	Lab Engineer	Engr. Usman Tariq
Robotics & Automation Lab	10	Embedded System Trainer (5) covering following experiments: a. LED Display b. Traffic Signal Control	2 - 3	Lab Engineer	Engr. Sarmad Hameed

		c. FND Display Experiment d. Text LCD Display e. ADC f. DAC g. Sound h. DC Motor Control i. Stepper Motor Control j. Key Matrix k. Rotary Switch l. SPI Communication m. I2C Communication n. Digital Clock (DS1302) o. Digital Thermometer (DS1620) p. UART Communication q. 32X16 Dot Matrix Display MPLAB ICD3 (6), MPLAB REAL ICE (2), NETDUINO PLUS (10), ARDUINO MEGA 2560 R3 (10), PIC 18F (30), PIC 16F (50), Desktop PCs (10)			
6 Computer	120	Desktop PCs,	1	Lab	Mr. Hafeez

labs		Printers, Scanners		Supervisor	Abbasi

Table 8.5: Resources available for labs

c. Describe the resources available for computing facilities.[20]

Particulars	Budgetary Allocation (Rupees)		
	2012-13	2013-14	2014-15
Computing Facilities	156,200	207,600	344,750

Table 8.6: Resources available for computing facilities

[20] The information is provided by Finance Department

ANNEXURE

Sources of Information

- Head of Department and Program Managers
- Academic Department
- Institutional Research Department
- Library
- Finance Department
- Human Resource Department
- Administration Department

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Program Self-Assessment Checklist

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

Guidelines for Program Team Report and QEC Review

Program: BS- Biosciences

Date: May 11th, 2016

Prepared by QEC Staff:

Ms. Riffat Mughal

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

PROGRAM SELF ASSESSMENT CHECKLIST

The following is a summary checklist of the main criteria and the associated standards that need to be addressed in the program self-assessment report.

CRITERIA AND ASSOCIATED STANDARDS		Yes/No	Issue/Observation	Possible Evidences
Criterion 1- Program Mission, Objectives, and Outcomes				
Standard 1-1	Program Measurable Objectives			
	a. Document institution, department, and program mission statements	✓		
	b. State program objectives	✓		
	c. State program outcomes	✓		
	d. Describe how each objective is aligned with program, college, and institution mission statements	✓		
	e. Outline the main elements of the strategic plan to achieve the program mission and objectives	✓		
	f. Table 4.1 program objectives assessment	✓		
	Please find sample of Table 4.1 attached in Annexure I (i-ii)			
Standard 1-2	Program Outcomes			
	a. Table 4.2 outcomes versus objectives **Please find example of Table 4.2 attached in Annexure II (iii)**	✓		
	b. Employer survey	✓		
	c. Alumni survey	N/A		
	d. Graduating student's survey	✓		
Standard 1-3	Assessment Results And Improvement Plans			
	a. Describe the action taken on based on the periodic assessments	✓		
	b. Describe major future program improvement plans based on recent assessments	✓		
	c. List strengths and weaknesses of the programs	✓		
	d. List significant future plans for the program	✓		

Standard 1- 4	Overall Performance Using Quantifiable Measures			
	a. Indicate the CGPA of successful students per semester, time required to complete the program, drop out ratio of students per semester (of the last 3 years) **Please find example attached in Annexure III (pg iv)**	✓		
	b. Indicate the percentage of employers that are strongly satisfied with the performance of the department's graduates. Use Employer's survey.	✓		
	c. Percentage of Student Evaluation/Assessment results for all the courses and faculty. Use Teacher Evaluation Results.	✓		
	d. Percentage/List/Number of research activities i.e. journal publications, funded projects, conference publications per faculty and per year, and the faculty awarded excellence in research **Please find example attached in Annexure III (pg iv)**	✓		
	e. Number of short courses workshops, seminars organized on community service level **Please find example attached in Annexure III (pg iv)**	✓		
	f. Faculty and student surveys results to measure the administrative services provided	✓		
Criterion 2 – Curriculum Design And Organization				
	Courses detailed outline as in item E criterion 2 of the Self-Assessment Manual			
Standard 2-1	Courses Vs. Objectives			
	a. Title of Degree Program	✓		
	b. Definition of Credit Hour	✓		
	c. Degree Plan: Attach a flow chart showing pre-requisites, core, and elective courses. **Please find example attached in Annexure IV (pg v-ix)**	✓		
	d. Table 4.3 curriculum course requirement **Please find example attached in Annexure IV (pg v-ix)**	✓		
	e. Describe how the program content (courses) meets the program Objectives.	✓		

	f. Table 4.4 Courses versus Outcomes. List the courses and tick against relevant outcomes. **Please find example attached in Annexure IV(pg v-ix)**	✓		
Standard 2-2	Theory, Problem Analysis/ Solution and Design in Program			
	a. Table 4.5 Standard 2-2 requirements	✓		
Standard 2-3	Mathematics & Basic Sciences Requirements			
	a. Address standards 2-3, 2-4, and 2-5 using information required in Table 4.4	✓		
Standard 2-4	Major Requirements as Specified by Accreditation Body	✓		
Standard 2-5	Humanities. Social Sciences, Arts, Ethical. Professional & Other Requirements			
	a. List the courses required by the Accreditation Body.	✓		
Standard 2-6	Information Technology Content Integration Throughout the Program			
	a. List the courses required by the Accreditation Body.	✓		
	b. Describe how they are applied and integrated throughout the program	✓		
Standard 2-7	Communication Skills (Oral & Written)			
	a. List the courses required by the Accreditation Body.	✓		
	b. Describe how they are applied in the program.	✓		
Criterion 3 – Laboratories and Computing Facilities				
Standard 3- 1	Lab Manuals / Documentation / Instructions			
	a. Explain how students and faculty have adequate and timely access to the manuals/documentation and instructions	✓		
	b. Are the resources available sufficient for the program?	✓		
Standard 3- 2	Adequate Support Personnel for Labs			
	Indicate for each laboratory, support personnel, level of support, nature and extent of instructional support. **Please find example attached in Annexure V(pg x)**	✓		

Standard 3- 3	Adequate Computing Infrastructure and Facilities	✓		
	a. Describe how the computing facilities support the computing component of your program	✓		
	b. Are there any shortcomings in the computing infrastructure and facilities?	✓		
Criterion 4 – Student Support and Advising				
Standard 4-1	Sufficient Frequency of Course Offering			
	a. Provide the department's strategy for course offerings	✓		
	b. Explain how often core courses are offered.	✓		
	c. Explain how often elective courses are offered.	✓		
	d. Explain how required courses outside the department are managed to be offered in sufficient number and frequency	✓		
Standard 4-2	Effective Faculty / Student Interaction			
	Describe how you achieve effective student/faculty interaction in courses taught by one or more than one person; such as two faculty members, a faculty member, and a teaching assistant or a lecturer	✓		
Standard 4-3	Professional Advising and Counseling			
	a. Describe how students are informed about program requirements	✓		
	b. Describe the advising system and indicate how its effectiveness is measured	✓		
	c. Describe the student counseling system and how students get professional counseling when needed	✓		
	d. Indicate if students have access to professional counseling; when necessary	✓		
	e. Describe opportunities available for students to interact with practitioners, and to have membership in technical and professional societies	✓		
Criterion 5 – Process Control				
Standard 5-1	Admission Process			
	a. Describe the program admission criteria at the institutional level, faculty or department if applicable.	✓		

	b. Make a Flowchart **Please find example attached in Annexure VI (pg xi-xii)**	✓		
	c. Describe policy regarding program/credit transfer	✓		
	d. Indicate how frequently the admission criteria are evaluated and if the evaluated results are used to improve the process	✓		
Standard 5-2	Registration and Students			
	a. Describe how students are registered in the program	✓		
	b. Describe how students' academic progress is monitored and how their program of study is verified to adhere to the degree requirements	✓		
	c. Indicate how frequently the process of registration and monitoring are evaluated and if the evaluation results are used to improve the process	✓		
Standard 5-3	Faculty Recruitment and Retention Process			
	a. Describe the process used to ensure that highly qualified faculty is recruited to the program.	✓		
	b. Make a Flowchart **Please find example attached in Annexure VI (pg xi-xii)**	✓		
	c. Indicate methods used to retain excellent faculty members	✓		
	d. Indicate how evaluation and promotion processes are in line with institution mission statement	✓		
	e. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process	✓		
Standard 5-4	Effective Teaching and Learning Process			
	a. Describe the process and procedures used to ensure that teaching and delivery of course material is effective and focus on students learning	✓		
	b. Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process	✓		
Standard 5-5	Program Requirements Completion Process			
	a. Describe the procedure used to ensure	✓		

	that graduates meet the program requirements			
	b. Describe when this procedure is evaluated and whether the results of this evaluation are used to improve the process	✓		
Criterion 6 – Faculty				
Standard 6-1	Program Faculty Qualifications and Number			
	a. Faculty resumes in accordance with the format	Launched		
	b. Table 4.6 faculty distribution by program's areas **Please find example attached in Annexure VII (pg xiii)**	✓		
Standard 6-2	Current Faculty, Scholarly Activities & Development			
	a. Describe the criteria for faculty to be deemed current (updated in the field) in the discipline and based on these criteria and information in the faculty member's resumes, what percentage of them is current. The criteria should be developed by the department	✓		
	b. Describe the means for ensuring that full time faculty members have sufficient time for scholarly and professional development	✓		
	c. Describe existing faculty development programs at the departmental and university level. Demonstrate their effectiveness in achieving faculty development	✓		
	d. Indicate how frequently faculty programs are evaluated and if the evaluation results are used for improvement	✓		
Standard 6-3	Faculty Motivation and Job Satisfaction			
	a. Describe programs and processes in place for faculty motivation	✓		
	b. Indicate how effective these programs are	✓		
	c. Obtain faculty input using faculty survey (Appendix C) on programs for faculty motivation and job satisfaction	✓		

Criterion 7 – Institutional Facilities				
Standard 7-1	New Trends in Learning (e.g. E-Learning)			
	a. Describe infrastructure and facilities that support new trends in learning	✓		
	b. Indicate how adequate the facilities are	✓		
Standard 7-2	Library Collections & Staff			
	a. Describe the adequacy of library's technical collection	✓		
	b. Describe the support rendered by the library	✓		
Standard 7-3	Class-rooms & Offices Adequacy			
	a. Describe the adequacy of the classrooms	✓		
	b. Describe the adequacy of faculty offices	✓		
	Please find examples of Criterion 7 attached in Annexure VIII (pg xiv-xvi)			
Criterion 8 – Institutional Support				
Standard 8-1	Support and Financial Resources			
	a. Describe how your program meets this standard. If it does not explain the main causes and plans to rectify the situation	✓		
	b. Describe the level of adequacy of secretarial support, technical staff and office equipment	✓		
Standard 8-2	Number and Quality of GSs, RAs and Ph.D. Students			
	a. Provide the number of graduate students, research assistants and Ph.D. students for the last three years	✓		
	b. Provide the faculty: graduate student ratio for the last three years	✓		
Standard 8-3	Financial Support for Library and Computing Facilities			
	a. Describe the resources available for the library	✓		
	b. Describe the resources available for laboratories	✓		
	c. Describe the resources available for computing facilities	✓		
	Please find examples of Criterion 8 attached in Annexure IX (pg xvii-xix)			

***Key**

✓ - Yes X- No NA- Not Applicable

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Assessment Team Report

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

ASSESSMENT TEAM REPORT

BS- Biosciences

Spring 2016

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

Assessment Team Report

The AT report is comprised of the following:

A. Review Report
B. Assessment Results Implementation Plan Summary
C. Criteria Referenced (Rubric) Evaluation of SAR

A. The Review Report

1. Names of Assessment Team Members

i. Dr Sarosh Salman
ii. Mr Zubair Ahmed Shah
iii. Ms Tanzeela Yunus

2. Date of Nomination

1st June 2016

3. Assessment duration (e.g. 7 days or 10 days)

Twenty Days (20) days

4. Name of Department and Program being assessed

Biosciences and Bachelor of Science in Biosciences (BS-Bio)

5. Shortcomings of the PT report

Average time for completing UG program and attrition rate is not stated.

6. **Comments on:**

   i. **Relevance and the comprehensiveness of the responses to criteria / standards given in the SA Manual**

   More than 90%

   ii. **Authenticity of the information / data provided in the report**

   Consistent with the physical resources

   iii. **Adequacy of the summaries / conclusions drawn by PT on the basis of various feedbacks / surveys**

   _____

   iv. **Observations made during the assessment**

   Faculty teaching 4 different courses will effect quality and research productivity time.

   Recruitment ratio of Alumni

   v. **Strengths and weaknesses of the Program**

   The **strengths** of the program are:

   - Dedicated faculty
   - Good faculty and staff ratio

   Weaknesses

   - Small size labs
   - Insufficient library books
   - Marketing lacking

7. **Date of the presentation of AT report in the exit meeting**

   11th July 2016

B. Criteria Referenced (Rubric) Evaluation of SAR

CRITERIA REFERENCED SELF ASSESSMENT – METHODOLOGY AND EVALUATION TOOL

Scoring of Criterion Items

1. Key areas of each criterion are to be scored normally by considering the approach taken by the university and the results achieved. Maximum score for each items is 5 and the minimum is 1. The visiting team is required to award the score by encircling one of the entries against each item. The total of the encircled values (TV) for each criterion will be determined and normalized in percentages. Each criterion has a weight allocated to it. Scores pertaining to a particular criterion will be the product of TV and its weightage. Following are the guidelines to be used to awarding score to each key area.

Result	**Score**
Poor performance in most of the areas.	1
Fair performance in most of the areas.	2
Good performance for most areas. No poor performance in any areas.	3
Good to excellent performance in all areas.	4
Excellent performance in most of the areas.	5

Criteria Referenced Self-Assessment – Methodology and Evaluation Tool

Criterion 1 – Program Mission, Objectives and Outcomes		**Weight = 0.05**				
Factors		**Score**				
1	Does the Program have documented measureable objectives that support faculty / college and institution mission statements?	5	4	3	2	1
2	Does the Program have documented outcomes for graduating students?	5	4	3	2	1
3	Do these outcomes support the Program objectives?	5	4	3	2	1
4	Are the graduating students capable of performing these outcomes?	5	4	3	2	1
5	Does the department assess its overall performance periodically using quantifiable measures?	5	4	3	2	1
6	Is the result of the Program Assessment documented?	5	4	3	2	1
	Total Encircled Value (TV)	**30**				
Score 1 **(S1) = [TV/(No. of Questions *5)] *100 *Weight**		**5**				

Criterion 2 – Curriculum Design and Organization		**Weight = 0.20**				
Factors		**Score**				
1	Is the curriculum consistent?	5	4	3	2	1
2	Does the department assess its overall performance periodically using quantifiable	5	4	3	2	1
3	Are theoretical background, problem analysis and solution design stressed within the program's core material?	5	4	3	2	1
4	Does the curriculum satisfy the core requirements laid down by respective accreditation bodies?	5	4	3	2	1
5	Does the curriculum satisfy the major requirements laid down by HEC and the respective councils / accreditation bodies?	5	4	3	2	1
6	Does the curriculum satisfy the professional requirements as laid down by Accreditation Body?	5	4	3	2	1
7	Is the information technology component integrated throughout the program?	5	4	3	2	1
8	Are oral and written skills of the students developed and applied in the program?	5	4	3	2	1
	Total Encircled Value (TV)	**35**				
Score 2 **(S2) = [TV/(No. of Questions *5)] *100 *Weight**		**17.5**				

Criterion 3 – Laboratories and Computing Facilities		**Weight = 0.10**				
Factors		**Score**				
1	Are laboratory manuals / documentation / instructions etc. for experiments available and readily accessible to faculty and students?	5	4	3	2	1
2	Are there adequate number of support personnel for instruction and maintaining the laboratories?	5	4	3	2	1
3	Are the university's infrastructure and facilities adequate to support the program objectives?	5	4	3	2	1
	Total Encircled Value (TV)	**12**				
	Score 3 **(S3) = [TV/(No. of Questions *5)] *100 *Weight**	**8**				

Criterion 4 – Student Support and Advising		**Weight = 0.10**				
Factors		**Score**				
1	Are the courses being offered in sufficient frequency and number for the students to complete the program in a timely manner?	5	4	3	2	1
2	Are the courses in the major area structured to optimize interaction between the students, faculty and teaching assistants?	5	4	3	2	1
3	Does the university provide academic advising on course decisions and career choices to all students?	5	4	3	2	1
	Total Encircled Value (TV)	**10**				
	Score 4 **(S4) = [TV/(No. of Questions *5)] *100 *Weight**	**6.67**				

Criterion 5 – Process Control		**Weight = 0.15**				
Factors		**Score**				
1	Is the process to enroll students to a program based on quantitative and qualitative criteria?	5	4	3	2	1
2	Is the process above clearly documented and periodically evaluated to ensure that it is meeting its objectives?	5	4	3	2	1
3	Is the process to register students in the program and monitoring their progress documented?	5	4	3	2	1
4	Is the process above periodically evaluated to ensure that it is meeting its objectives?	5	4	3	2	1
5	Is the process to recruit and retain faculty in place and documented?	5	4	3	2	1
6	Are the processes for faculty evaluation & promotion consistent with the institution mission?	5	4	3	2	1
7	Are the processes in 5 and 6 above periodically evaluated to ensure that they are meeting their objectives?	5	4	3	2	1

8	Do the processes and procedures ensure that teaching and delivery of course material emphasize active learning and that course learning outcomes are met?	5	4	3	2	1
9	Is the process in 8 above periodically evaluated to ensure that it is meeting its objectives?	5	4	3	2	1
10	Is the process to ensure that graduates have completed the requirements of the program base on standards and documented procedures?	5	4	3	2	1
11	Is the process in 10 above periodically evaluated to ensure that it is meeting its objectives?	5	4	3	2	1
	Total Encircled Value (TV)	**35**				
	Score 5 **(S5) = [TV/(No. of Questions *5)] *100 *Weight**	**9.54**				
Criterion 6 – Faculty		**Weight = 0.15**				
Factors		**Score**				
1	Are there enough full time faculty members to provide adequate coverage of the program areas / courses with continuity and stability?	5	4	3	2	1
2	Are the qualifications and interests of faculty members sufficient to teach all courses, plan, modify and update courses and curricula?	5	4	3	2	1
3	Do the faculty members posses a level of competence that would be obtained through graduate work in the discipline?	5	4	3	2	1
4	Do the majority of faculty members hold a PhD degree in their discipline?	5	4	3	2	1
5	Do faculty members dedicate sufficient time to research to remain current in their disciplines?	5	4	3	2	1
6	Are there mechanisms in place for faculty development?	5	4	3	2	1
7	Are faculty members motivated and satisfied so as to excel in their profession?	5	4	3	2	1
	Total Encircled Value (TV)	**23**				
	Score 6 **(S6) = [TV/(No. of Questions *5)] *100 *Weight**	**9.86**				

Criterion 7 – Institutional Facilities						Weight = 0.15
Factors						**Score**
1	Does the institution have the infrastructure to support new trends such as e-learning?	5	4	3	2	1
2	Does the library contain technical collection relevant to the program and is it adequately staffed?	5	4	3	2	1
3	Are the class rooms and offices adequately equipped and capable of helping faculty carry out their responsibilities?	5	4	3	2	1
	Total Encircled Value (TV)	**6**				
	Score 7 **(S7) = [TV/(No. of Questions *5)] *100 *Weight**	**6**				

Criterion 8 – Institutional Support						Weight = 0.15
Factors						**Score**
1	Is there sufficient support and finances to attract and retain high quality faculty?	5	4	3	2	1
2	Are there an adequate number of high quality graduate students, teaching assistants and PhD students?	5	4	3	2	1
	Total Encircled Value (TV)	**2**				
	Score 8 **(S8) = [TV/(No. of Questions *5)] *100 *Weight**	**3**				

OVERALL ASSESSMENT SCORE = S1 + S2 + S3 + S4 + S5 + S6 + S7 + S8 + S9 + S10

= 65.56926407

C. Assessment Results Implementation Plan Summary BS-Biosciences

AT Findings	Corrective Action	Implementation Date	Responsible Body	Resources Needed
1. Every faculty is teaching 4 different courses thus considering factors like expertise and command on subject the quality of education being provided is compromised.	It is recommended that the number of faculty members in the department should be increased.	December 2016	SZABIST Administration	Office space and clerical support
2. Some of the Lab equipment are not regularly updated based on the evolving nature of Biological Sciences field.	It is suggested that the Labs should be updated and the budget for lab development should be increased.	December 2016	SZABIST Administration	Finance required for updating lab equipment
3. Currently, the program has 6 labs but the operating space is very limited. It can't even accommodate 20 students at a time.	It is recommended that the operating space of Labs should be increased.	December 2016	SZABIST Administration	Space required for constructing new labs
4. The admission promotion campaign is found to be weak.	It is suggested that the admission promotion should be strengthen.	December 2016	HOD and program manager	Transport, marketing material like brochures, etc.
5. The program relevant books in library are insufficient.	It is recommended that the number of library books be significantly amplified.	June 2017	HOD and program manager	Finance required for the procurement of books
6. There are insufficient options for increasing students' placement opportunities.	It is suggested that the department specific Industrial liaison Committee should be formed to multiply the number of opportunities for students.	June 2017	HOD and program manager	N.A.

President's Comments :
The results of the Self-Assessment Report process will help SZABIST in meeting its commitment towards excellence in education. This will be done with the timely implementation of the recommendation presented by the Assessment Team for BS-Biosciences program. I would like to thank the Head of Department, Program Manager, Program Team, Assessment Team and the IR/QEC staff for their efforts in completing this exercise on time.

Name and Signature:

Madame Shahnaz Wazir Ali

Dean's or HoD's Comments :
The implementation plan for the recommendations made by the assessment team is already in place and will be executed in well-timed manner with the availability of the required resources.

Name and Signature:

Dr. Kashif Ali

QEC Comments: The evaluation of the BS-Biosciences program has highlighted areas for improvement. The implementation of the Assessment Team's recommendation will improve the quality of the program and enhance the overall educational experience of the students. The IR/QEC staff is confident that the implementation of the corrective actions will amplify the market standing of the program and students' overall educational experience. The SAR reached its completion with the support of the Head of the Department and Program Manager and the efforts of the Program Team and Assessment Team and the dedication of the QEC staff.

Name and Signature:

Ms. Faryal Shahabuddin

Ms. Mahwash Imran

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

President's Comments :
The results of the Self-Assessment Report process will help SZABIST in meeting its commitment towards excellence in education. This will be done with the timely implementation of the recommendation presented by the Assessment Team for BS-Biosciences program. I would like to thank the Head of Department, Program Manager, Program Team, Assessment Team and the IR/QEC staff for their efforts in completing this exercise on time.

Name and Signature:

Madame Shahnaz Wazir Ali

Dean's or HoD's Comments :
The implementation plan for the recommendations made by the assessment team is already in place and will be executed in well-timed manner with the availability of the required resources.

Name and Signature:

Dr. Kashif Ali

QEC Comments: The evaluation of the BS-Biosciences program has highlighted areas for improvement. The implementation of the Assessment Team's recommendation will improve the quality of the program and enhance the overall educational experience of the students. The IR/QEC staff is confident that the implementation of the corrective actions will amplify the market standing of the program and students' overall educational experience. The SAR reached its completion with the support of the Head of the Department and Program Manager and the efforts of the Program Team and Assessment Team and the dedication of the QEC staff.

Name and Signature:

Ms. Faryal Shahabuddin

Ms. Mahwash Imran

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Program Team Registration Forms

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Program Team

Program Team of (Name of Department / Faculty): BS-Biosciences / ~~Asma~~

Team Leader: Asma Bashir.

Name: Asma Bashir

Position: Lecturer

Institution: SZABIST

Contact No: (Office) 35381535

Mobile No: 03331350269

Email Address: asmibashir@gmail.com

Role in Program Team:

Beside his / her own responsibilities, he/ she will also be responsible for the following:

- To attend the SAR meetings as and when required.
- To ensure that Self Assessment Mechanism is being implemented as per the given guidelines.
- To prepare drafts of the SAR on the given dead line and send them to QEC for timely feedback.
- To keep the record of all the supporting documents addressing various standards of the SAR.
- To circulate all the applicable feedback forms to the target stakeholders and include the analysis of the same in the SAR.
- To communicate with the management on the effectiveness and suitability of the Self Assessment Mechanism.

Declaration of the Program Team Member:

I am quite willing to be part of this team and assure that I would do my best to play my role in the working of Program Team.

(Signature of PT Member)

18th Mar' 2016
Date

Approved By: 31/3/16

(Head of the Department)

Note: Completed form should be sent to the QEC

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Program Team

Program Team of (Name of Department / Faculty): BS Biosciences

Team Leader: Asma Bashir

Name: Farah Ashraf

Position: Lecturer

Institution: SZABIST

Contact No: (Office) 35831535

Mobile No: 0343-2481734

Email Address: ashraf.farah12@gmail.com

Role in Program Team:

Beside his / her own responsibilities, he/ she will also be responsible for the following:

- To attend the SAR meetings as and when required.
- To ensure that Self Assessment Mechanism is being implemented as per the given guidelines.
- To prepare drafts of the SAR on the given dead line and send them to QEC for timely feedback.
- To keep the record of all the supporting documents addressing various standards of the SAR.
- To circulate all the applicable feedback forms to the target stakeholders and include the analysis of the same in the SAR.
- To communicate with the management on the effectiveness and suitability of the Self Assessment Mechanism.

Declaration of the Program Team Member:

I am quite willing to be part of this team and assure that I would do my best to play my role in the working of Program Team.

(Signature of PT Member)

18th March-2016

Date

Approved By: 31/3/16

(Head of the Department)

Note: Completed form should be sent to the QEC

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

BS- Biosciences

Assessment Team Registration Forms

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Assessment Team

Assessment Team of (Name of Department / Faculty): BS - BIOSCIENCES

Team Leader: _____

Name: Dr Sarosh Salman

Position: Assist. Professor

Institution: SZABIST

Contact No: (Office) 35821535 - (208)

Mobile No: 0300-2245-693

Email Address: sarosh siddiqui@hotmail.com

Role in Assessment Team:

- Beside his / her own responsibilities, He/ She will also be responsible for the following:
- The review of SAR
- Physical Verification of the academic facilities
- Verification of the contents of SAR
- Evidence gathering to support their findings
- Evaluation of SAR in light of the above points
- Reporting on the findings of the evaluation and visits
- Converting the report in the HEC-specified rubric format

Declaration of the Assessment Team Member:

I am quite willing to be part of this team and assure that I would do my best to play my role in the working of Assessment Team.

(Signature of AT Member)

31-05-2016
Date

Approved By: _____

(Head of the QEC)

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Assessment Team

Assessment Team of (Name of Department / Faculty): BS BioSciences.

Team Leader: –

Name: Tanzila Younas. Position: Asst. Prof.

Institution: SZABIST Contact No: (Office) _____

Mobile No: 0312-4155042 Email Address: tanzila@szabist.edu.pk.

Role in Assessment Team:

- Beside his / her own responsibilities, He/ She will also be responsible for the following:
- The review of SAR
- Physical Verification of the academic facilities
- Verification of the contents of SAR
- Evidence gathering to support their findings
- Evaluation of SAR in light of the above points
- Reporting on the findings of the evaluation and visits
- Converting the report in the HEC-specified rubric format

Declaration of the Assessment Team Member:

I am quite willing to be part of this team and assure that I would do my best to play my role in the working of Assessment Team.

Tanzila. 31-05-2016

(Signature of AT Member) Date

Approved By: Jawad

(Head of the QEC)

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Assessment Team

Assessment Team of (Name of Department / Faculty): BS Biosciences

Team Leader: _____

Name: ZUBAIR A. SHAH

Position: Assist Prof.

Institution: SZABIST

Contact No: (Office) 154 Building

Mobile No: 0308-2056180

Email Address: ZUBAIR.AHMED@SZABIST.Edu.pk

Role in Assessment Team:

- Beside his / her own responsibilities, He/ She will also be responsible for the following:
- The review of SAR
- Physical Verification of the academic facilities
- Verification of the contents of SAR
- Evidence gathering to support their findings
- Evaluation of SAR in light of the above points
- Reporting on the findings of the evaluation and visits
- Converting the report in the HEC-specified rubric format

Declaration of the Assessment Team Member:

I am quite willing to be part of this team and assure that I would do my best to play my role in the working of Assessment Team.

ZAS

(Signature of AT Member)

6/2/16

Date

Approved By: Jawad

(Head of the QEC)