SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

MS- Biosciences

Karachi Campus

Spring 2016

Table of Contents

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

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

MS-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 one program in Biosciences Department the QEC initiated the Self-Assessment process of MS-Biosciences program. The highlights of the process were as follow:

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) Dr. Syed Zulfiqar Naqvi
(ii) Mr. Shahab Mehmood
(iii) Mr. Mujtaba Babar

2. Submission of PT Report

The PT submitted the report on April 19th, 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 16th, 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. Hammad Afzal Kayani
(ii) Ms. Ayesha Latif

4. Date of Submission of AT Report

The AT Report was submitted on June 29th, 2016.

5. AT Findings and Recommendations

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

(i) Lack of easy access to essential research data causing setbacks and delays in research efforts. It is suggested that faculty should have complete access to research journals.
(ii) Number of indexes and journals and publications catering specifically to Biosciences discipline are lacking. It is suggested that SZABIST should acquire the subscription of highly accessed Biological and Life sciences journals.
(iii) Program related titles and number of books are too low. It is recommended that relevant books and journals are acquired soon.
(iv) Program related workshops and seminars. It is recommended that at least one workshops/seminars be conducted per semester

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 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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SELF-ASSESSMENT REPORT

MS- Biosciences

Program Team Report

Spring 2016

Contents

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

a. Institute, Department and Program Mission Statements

Mission Statement of Shaheed Zulfikar Ali Bhutto Institute of Science and Technology

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 MS in Biosciences Program

The aim of the **MS in Biosciences** program is to provide quality education and research to develop the knowledge and skills of the students through interactive lectures and wet lab sessions. The students are encouraged to carry out research projects focusing on recent advances in the field of biological science.

b. Program Objectives[1]

Upon completion of a 30-credit hour MS in Biosciences program, the graduates will:

1. Have sound knowledge/ training in applied and practical aspects of the field.
2. Students receiving MS degree will help them in carrying out doctoral research in following biological sciences; such as
    a. Cell and molecular biology
    b. Biotechnology
    c. Biochemistry
    d. Food Science

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

3. Students will be able to independently write research grants and address gaps in the field biological sciences. And using his/her developed intellect the students will help the industry in development of innovative methods in research and industry.

c. Program Outcomes (MS Biosciences)

To accomplish the program objectives, the department aims to achieve following outcomes:

1. The outcome of the core course and electives enables students for critical thinking advanced research method designing, molecular applications in genetics and use of mathematical tools for scientific studies.
2. The study of environmental sciences provides biotechnological applications for understanding effects of different human activities on environment.
3. Industrial biotechnology course will enable student to engage in biotechnological methods used in industry.
4. Courses such as medical biotechnology and clinical biochemistry will enable students to understand the basics of application of these subjects in medical sciences along with drug discovery and development, techniques in diagnostics and applied biotechnology.
5. The ability to think critically, perform scientific analysis and develop solutions in various discipline of life sciences.
6. Final year thesis enables students to design experiments for small and large scale research projects.

d. Describe how each Objective is Aligned with the Program, and Institution Mission Statements.

Objective	Alignment with program, and institution mission statement
To have sound knowledge/training in applied and practical aspects of the field.	The outcome of the core course and electives enables students for critical thinking advanced research method designing, molecular applications in genetics and use of mathematical tools for scientific studies. The study of environmental sciences provides biotechnological applications for understanding effects of different human activities on environment. Industrial biotechnology course will enable student to engage in biotechnological methods used in industry. Courses such as medical biotechnology and clinical biochemistry will enable students to understand the basics of application of these subjects in medical sciences along with drug discovery and development, techniques in diagnostics and applied biotechnology.
Students receiving MS degree will be able to carry out doctoral research in following areas in biological sciences; such as, cell and molecular biology, Biotechnology, Biochemistry and Food Science	The ability to think critically, perform scientific analysis and develop solutions in various discipline of life sciences
Students will be able to independently write research grants and address gaps in the field biological sciences. And using his/her developed intellect the students will help the industry in development of innovative methods in research and industry.	Final year thesis which will enable students in designing experiments for small and large scale research projects.

Table 1.1: Objective Alignment

e. Elements of Strategic Plan

Main elements of the strategic plan to achieve program mission and objectives

Our academic strategic plan is based on our mission to be a student-centered department that prepares broadly educated, highly productive human beings with ethics.

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; 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, staff and students.
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, a wide range of electives subjects are offered to ensure that the curriculum is responsive to the ever changing needs of research in biosciences field.
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 engage students as researchers by integrating research opportunities into the curriculum (particularly through Thesis and laboratory exercises), by providing training for students in research methodology and responsible research conduct and by involving graduate students in multi-disciplinary research carried out at SZABIST, such as Renewable Energy, Stem Cell, Remote Distance Learning etc. to name a few. SZABIST also aids student research by providing student travel grants to present their work at conferences and creating a campus-based student research journal.
4. **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 the university campus where leading companies are invited to explain their recruitment procedures and the scenario about present and future vacancies. A graduate directory is published annually, which is a compendium of CVs of all students who have graduated during the year and it is distributed free of charge to all leading companies. The directory serves as a useful reference book to find appropriate candidates for present and future vacancies.
5. **Co-curricular Learning:** In order to promote learning that is effective, self-motivated, and exploratory, a wide range of learning opportunities, both curricular and co-curricular

are used. It includes student research, recreational and athletic programs, and co-curricular opportunities, such as, academic societies and student councils. 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 corporate world for innovative curriculum development, internships, placements, sponsorships and joint activities.

f. Program Objective Assessment (Table 4.1)

Objective	How Measured	When Measured	Improvement /Issues	Improvements Made
Sound training in applied and practical aspects of the field.	Core & Elective course outlines, midterm & final examinations, assignments and presentations.	Every Semester	Periodic recommendations from Faculty members on updating of the Curricula	Board of studies reviews courses and endorsements to recommendations.
Students receiving MS degree will help them in carrying out doctoral research in following biological sciences; such as, Cell and molecular biology, Biotechnology, Biochemistry and Food Science	Assignments, research projects and thesis	Every Semester	Need further lab equipment according to the recent advances in research. Expansion of space for labs with increasing number of students	At the moment collaborations with other institutes for carrying out limited research/lab work.
Students will be able to independently write research grants and address gaps in the field biological sciences. And using developed intellect, the students will help the industry in development of innovative methods in research and industry.	Projects, Assignments and thesis	Every Semester	Experts to be invited from the industry and the field of expertise.	Guest speakers are invited to deliver lectures and discuss their experiences and insights in the field of their expertise.

Table 1.2: Program Objectives Assessment[2]

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

Standard 1-2 Program Outcomes

a. Program Outcomes and Objectives Matrix (MS Biosciences)

In order to assure that graduates of the MS Bioscience program have achieved the program's outcomes, a summary matrix depicting the mapping of Program's learning outcomes to its objectives is shown in the following table.

PROGRAM OBJECTIVES	PROGRAM OUTCOMES		
	1	2	3
1	√	√	√
2	√	√	√
3	√	√	√

Table 1.3: Program Objectives Assessment[3]

b. Employer Survey

The MS-Biosciences program was launched in Fall 2015 and the first batch will graduate in 2017, hence, Employer Survey is not applicable.

c. Alumni Survey

The MS-Biosciences program was launched in Fall 2015 and no batch has been graduated up till now therefore Alumni Survey is not applicable.

d. Graduating Student Survey

The MS-Biosciences was initiated in fall 2015 and no batch has yet been graduated therefore Graduating Student Survey section is not applicable.

Standard 1-3 Assessment Results and Improvement Plans

a. Describe the action taken based on the periodic assessments.

In every semester, several actions are taken in order to improve MS Biosciences Program. The following timetable summarizes these activities.

1. Before the commencement of the semester faculty members submit course outline and syllabus to the departmental head and the mechanism of the assessment of the course.
2. The HOD discusses the course outline and syllabus with respective faculty members and approves the identified measures

[3] Table 1.3 of PT Report is the Table 4.2 (Program Objectives Assessment) of AT Report

3. In the fifth-sixth week of semester students provide faculty evaluation which is facilitated by Academics departments
4. At the end of every semester, faculty members submit a course file to HOD with details of course outline and the course which was covered along with learning outcomes.
5. Every year, HOD submits operational and developmental budget to VP Academics in order to meet the needs of the program.
6. Board of Studies meeting is held biennially to periodic evaluate and update the curriculum.

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

- Keeping major program improvements in mind, Cluster heads are appointed by SZABIST in all programs which will contribute significantly in improvement of the programs.
- Expansion of Board of Studies to include experts from diverse industry background.
- To introduce problem based learning program rather than traditional class based teaching.

c. List strengths and weaknesses of the program

Strengths

- Curriculum has recently been developed taking new techniques and methodologies into account to keep our students well versed with the developed world.
- Faculty of MS Biosciences is the recipient of PhDs in various backgrounds covering all aspects of the program.
- Students are offered 50% scholarship for MS Biosciences.

Weaknesses

- The program is in its initial phase, hence have limited number of books in library.
- Research Journals are not subscribed on regular basis to help students for being updated with current advances in research in the relevant biological field.
- Lack of Laboratory for carrying MS-level, lab-based experiments and research.

d. List significant future plans for the program

1. Establishment of Biosafety Level 2 labs for carrying out animal cell culture, cell and molecular biology.
2. Development of natural product chemistry laboratory.
3. Availability of number of books and subscription of international journals in the field of Biosciences.

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

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)

- **Average CGPA[5]**

Semester CGPA	Fall 2015	Total Average
Average CGPA	3.0	3.0

Table 1.4: Average CGPA

- **Drop-out ratio of student every semester**

Drop-out ratio of student every semester[6]		
	Fall 2015	**Total Average**
Dropouts	0	0
Enrollment	13	13
Dropout Ratio	0	0

Table 1.5: Drop-out Ratio

[4]The source of information is ZAB Solutions.
[5] The MS-Biosciences program was initiated in Fall 2015 therefore average CGPA for Fall 2015 is only provided in Table 1.4.
[6] The MS-Biosciences program was initiated in Fall 2015 and nor dropout took place therefore dropout ratio is null, shown in Table 1.5.

b. Indicate the percentage of employers that are strongly satisfied with the performance of the department graduates.

As identified above, MS-Biosciences program is new and no graduates has been passed out therefore this question is not applicable.

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
	Fall	100	0	0	0	0	0

Table 1.6: Faculty & Courses Rating

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.

Publications of Faculty members:

- Jahangir M, Mehmood Z, Saifullah, Bashir Q, Mehboob F, **Ali K**. 2016. Halal status of ingredients after physicochemical alteration (Istihalah). Trends in Food Science and Technology, 47, 78-81.
- Saifullah, Azizuddin, Khan S, **Ali K**, Choudhary MI. 2014. Biotransformation of Dihydroepiandrosterone by cell suspension culture of *Codiaeum variegatum*. Chemistry of Natural Compounds, 4, 580-582.
- Agudelo-Romero P, **Ali K**, Choi YH, Sousa L, Verpoorte R, Pais MS, Tiburcio A, Fortes AM. 2014. Perturbation of polyamine catabolism affects normal grape ripening of Trincadeira cultivar. Plant Physiology and Biochemistry, 74, 141-155.
- Badar Z, Khan S, Saifullah, **Ali K**, Musharraf SG, Choudhary MI. 2013. In vitro and biotransformational studies of *Aloe barbadensis* Mill. Pakistan Journal of Botany, 46, 679-685.

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

- **Ali K**, Iqbal M, Yuliana ND, Lee Y-J, Park S, Han S, Lee J-W, Lee H-S, Verpoorte R, Choi YH. 2013. Identification of bioactive metabolites against adenosine A1 receptor using NMR-based Metabolomics. Metabolomics, 9, 778-785.
- **Ali K***, Iqbal M*, Fortes AM, Pais MS, Korthout HAAJ, Verpoorte R, Choi YH. 2013. Red wines attenuate TNFα production in human histiocytic lymphoma cell line: An NMR spectroscopy and chemometrics based study. Food Chemistry, 141, 3124-3130.
- Hasnain G, Roje S, Frelin O, Ellens KW, **Ali K**, Guan J-C, Garrett TJ, de Crécy-Lagard V, Gregory III JF, McCarty DR, Hanson AD. 2013. Identification and Characterization of the Missing Pyrimidine Reductase in the Plant Riboflavin Biosynthesis Pathway. Plant Physiology, 161, 48-56.
- **Ali K**, Iqbal M, Korthout HAAJ, Maltese F, Fortes AM, Pais MS, Verpoorte R, Choi YH. 2012. NMR spectroscopy and chemometrics as a tool for anti-TNFα activity screening in crude extracts of grapes and other berries. Metabolomics, 8, 1148-1161.
- **Ali K**, Maltese F, Figueiredo A, Rex M, Fortes AM, Zyprian E, Pais MS, Verpoorte R, Choi YH. 2012. Alterations in grapevine leaf metabolism upon inoculation with *Plasmapora viticola* in different time-points. Plant Science, 191-192, 100-107.
- Gerardi C, Blando F, Mule G, Maltese F, **Ali K**, Verpoorte R. 2012. Metabolic characterization of *Prunus cerasus* L. and *Prunus mahaleb* L. fruits. Acta Horticulturae, 940, 361-368.
- Fortes AM, Agudelo-Romero P, Silva MS, **Ali K**, Sousa L, Maltese F, Choi YH, Grimplet J, Martinez-Zapater JM, Verpoorte R, Pais MS. 2011. Transcript and metabolite analysis in Trincadeira cultivar reveals novel information regarding the dynamics of grape ripening. BMC Plant Biology, 11, 149.
- **Ali K,** Maltese F, Fortes AM, Pais MS, Choi YH, Verpoorte R. 2011. Pre-analytical method for NMR-based grape metabolic fingerprinting and chemometrics. Analytica Chimica Acta, 703, 179-186.

- Georgiev MI, **Ali K**, Alipieva K, Choi YH, Verpoorte R. 2011. Metabolic differentiations and classification of *Verbascum* species by NMR-based metabolomics. Phytochemistry, 72, 2045-2051.
- **Ali K,** Maltese F, Toepfer R, Choi YH, Verpoorte R. 2011. Metabolic Characterization of Palatinate German white wines according to sensory attributes, varieties, and vintages using NMR spectroscopy and multivariate data analyses. Journal of Biomolecular NMR, 49, 255-266.
- **Ali K,** Maltese F, Fortes AM, Pais MS, Choi YH, Verpoorte R. 2011. Monitoring biochemical changes during grape berry development in Portuguese cultivars by NMR spectroscopy. Food Chemistry, 124, 1760-1769.
- **Ali K,** Maltese F, Choi YH, Verpoorte R. 2010. Metabolic constituents of grapevine and grape-derived products. Phytochemistry Reviews, 9, 357-378.
- **Ali K,** Maltese F, Zyprian E, Rex M, Choi YH, Verpoorte R. 2009. NMR metabolic fingerprinting based grapevine metabolites associated with Downy mildew resistance. Journal of Agricultural and Food Chemistry, 57, 9599-9606.
- Nasib A, **Ali K,** Khan S. 2008. In vitro propagation of Croton (*Codiaeum variegatum*). Pakistan Journal of Botany, 40, 99-104.
- Nasib A, **Ali K,** Khan S. 2008. An optimized and improved method for the in vitro propagation of Kiwifruit (*Actinidia deliciosa*) using coconut water. Pakistan Journal of Botany, 40, 2355-2360.
- Khan S, Naseeb S, **Ali K.** 2007. Callus induction, plant regeneration and acclimatization of African violet (*Saintpaulia ionantha*) using leaves as explants. Pakistan Journal of Botany, 39, 1263-1268.
- Khan S, Naz S, **Ali K,** Zaidi S. 2006. Direct organogenesis of *Kalanchoe tomentosa* (Crassulaceae) from shoot tips. Pakistan Journal of Botany, 38, 977-981.
- **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.

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- Kazmi, S. K., Khan, S., Mirbahar, A. A., and **Kayani**, H. A. 2015. Comparative protein production profiling of (*Citrus retiuclata* blanco.) among tissue culture stages by Sodium Dodecyl Sulphate Polyacrylamide Gel Electrophoresis (SDS-PAGE). *The Natural Products Journal*. 5: 00-00
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- **Kayani**, H. A., Khan, S., Naz, S., and Choudhary, M. I. 2013. Micropropagation of *Agastache anisata* using nodal segments as explants and cytotoxic activity of its methanolic extracts. *Pakistan Journal of Botany*, 45(6): 2105-2109
- Zafar, S., Yousuf, S., **Kayani**, H. A., Saifullah, S., Khan, S., Al-Majid, A. M., and Choudhary, M. I. 2012. Biotransformation of oral contraceptive ethynodiol diacetate with microbial and plant cell cultures. *Chemistry Central Journal*, 6(1): 1-8
- Khan, S., Raziq, M., and **Kayani**, H.A., 2008. *In-vitro* propagation of *Asplenium nidus* (Bird's nest fern) from spores. *Pakistan Journal of Botany*, 40(1): 91-97
- Expression of the androgen receptor, pAkt, and pPTEN in breast cancer and their potential in prognostication (**2014**). Aisha Sultana, RomanaIdress, **Zulfiqar Ali Naqvi**, Iqbal Azam, Shaista Khan, Anwar Ali Siddiqui and El-Nasir Lalani. TranslOncol. Jun 2014; 7(3): 355–362. doi: 10.1016/j.tranon.2014.04.004.

- Molecular characterization of glucose-6 phosphate dehydrogenase deficiency in Pakistani population (**2011**). B. Moiz, A. Nasir, T. Moatter, **Z. A. Naqvi**, M. Khurshid. International Journal of Laboratory Hematology Volume 33, Issue 6, 570–578, December.
- Proteomic response of healing corneal epithelial cells (**2011**).**Zulfiqar Naqvi**, Nikhat Ahmed, ShamimMushtaq, and A. A. Siddiqui. Int J Health Sci (Qassim). Jul; 5(2 Suppl 1): 20–21.
- Albumin precursor and Hsp70 modulate corneal wound healing in an organ culture model (**2011**). Shamim Mushtaq, **Zulfiqar Ali Naqvi**, Anwar Ali Siddiqui, Nikhat Ahmed. ActaHistochemica 113 (2011) 36–42.
- Population study of 1311 C/T polymorphism of Glucose 6 Phosphate Dehydrogenase gene in Pakistan–an analysis of 715 X-chromosomes (**2009).** Bushra Moiz, Amna Nasir, Tariq Moatter, **Zulfiqar Ali Naqvi** and Mohammad Khurshid. BMC Genetics, 10:41
- Silencing of MBD1 and MeCP2 in Prostate Cancer Derived PC3 Cells Produces Differential Gene Expression Profiles and Cellular Phenotypes (**2008**). Yaqinuddin A, Abbas F, **Naqvi SZ**, Bashir MU, Qazi R, Qureshi SA, Biosci Rep. Dec;28(6):319-26.
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- Augmented Glycosylation During Wound Healing of Corneal Epithelium in Organ Cultures (**2002**). Asifa Ahmed, Nikhat Ahmed**, Zulfiqar Ali Naqvi** and ShamimMushtaq. Pakistan Journal of Ophthalmology;18(2):48-52
- Protein Deficiency Induced by β-Blockers in Migrating Corneal Epithelium (**2000**). Asifa Ahmed Nikhat Ahmedand **Zulfiqar Ali Naqvi.** Published in Karachi University Journal of Science 28 (1), 27-30

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

Since program is new we have not organized any short course works shops and seminars however students are encouraged to attend external events relevant to their studies

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

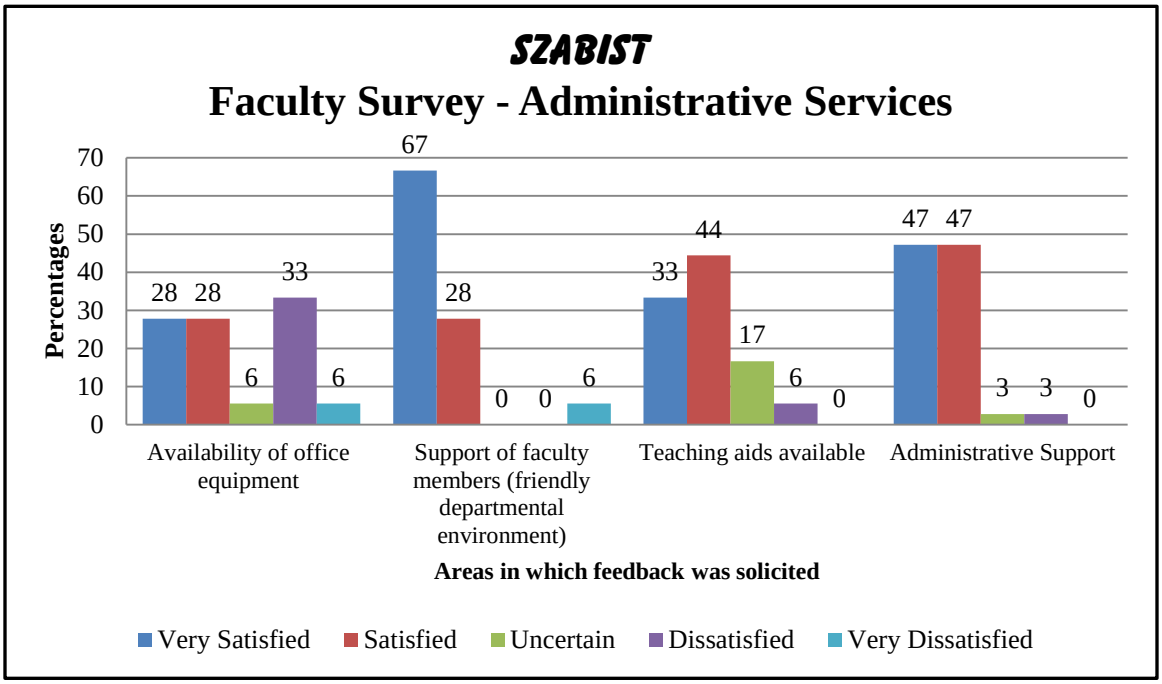

Figure 1.1

At present Graduating Student Survey and Alumni Survey are not applicable on MS-Biosciences program as no batch of graduates has been passed out.

[8] The source of information is Faculty 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[9]

Standard 2-1: Courses vs. Objectives

a. **Title of Degree:** Masters of Science in Bioscience

b. **Definition of credit hours:** It is a 30 credit hours program spanned over 4 core courses (each with 3 credit hours), 4 electives (each with 3 credit hours) and 1 research project (6 credit hours).

c. **Degree Plan:**

Semester – I	Semester – II	Semester – III	Semester - IV
Advanced Research Methodology	Techniques in Biomolecular Analysis	Elective – I	Elective - III
Biostatistics	Molecular Genetics	Elective – II	Elective - IV
		Thesis / Elective – V	Thesis (continued) / Elective - VI

Table 2.1: Degree Plan

* All courses are of 3 credits except thesis which is of 6 credits.

* Pre requisite of thesis is Research methodology

* If a student does not want to opt for a thesis then they are required to take two optional courses which will be 2 additional Electives.

d. **Curriculum Course Requirements**

Semester	Course Number	Core Courses	Research Courses	Elective Courses
1	BIO 5101	Advanced research methodology (3)		
	BIO 5102	Biostatistics (2+1)		
2	BIO 5202	Techniques in biomolecular analysis (2+1)		
	BIO 5201	Molecular genetics (3)		
3	BIO 5xxx			Elective – I (3)
	BIO 5xxx			Elective – II(3)
	BIO 5xxx		Thesis (6)	Elective – V(3)
4	BIO 5xxx			Elective -III(3)

[9] Source of Information Prospectus SZABIS 2015

	BIO 5xxx			Elective - IV(3)
	BIO 5xxx		Thesis (cont.) (6)	Elective – VI (3)
	Total Credit Hours	12	6	12+(6[10])
	Minimum Requirements	12	6	12

Table 2.2: Curriculum Course Requirements [11]

e. Courses versus Objectives

Courses	1	2	3
BIO 5101	X	X	
BIO 5102	X		X
BIO5201	X	X	X
BIO5202	X	X	
BIO5xxx(thesis)	X	X	X
BIO5xxx	X	X	X
BIO 5xxx [12]	X	X	
BIO5xxx	X	X	
BIO5xxx	X	X	
BIO5xxx	X	X	

Table 2.3: Courses vs. Objectives

f. Courses versus Outcomes

Courses	Program outcomes			
	1	2	3	4
BIO 5101	X	X	X	
BIO 5102	X	X	X	
BIO5201	X	X	X	
BIO5202	X	X	X	
BIO5xxx[13]*	X		X	
BIO5xxx (thesis)			X	
BIO 5xxx	X		X	
BIO5xxx	X		X	

[10] If a student does not want to opt for a thesis then they are required to take two optional courses which will be 2 additional Electives.
[11] Table 2.2 of PT Report is the Table 4.3 (Curriculum Course Requirements) of AT Report
[12] Elective subjects, Objectives satisfied will depend upon the elective selected by the student.
[13] Elective subjects, Outcomes satisfied will depend upon the elective selected by the student.

BIO5xxx	X		X	
BIO5xxx	X		X	

Table 2.4: Courses versus Outcomes[14]

Standard 2-2: Theory, Problem Analysis / Solution and Design

The courses comprise of theoretical knowledge and practical applications. In almost all courses students undergo through rigorous projects to apply the knowledge and skills they acquire in a course. Also these diverse projects help them to equip various skills like team building, conflict resolution, and ethical decision making etc., which are necessary for today's complex organizations.

a. Table 4.5 Standards 2-2 requirements

Element	**Courses**
Theoretical Background	BIO 5101, BIO 5102, BIO 5201, BIO 5202, Elective (Thesis), Elective (BIO5 xxx).
Problem analysis and solution *Students select any four courses.	BIO 5101, BIO 5102, BIO 5202, Elective (Thesis), Elective (BIO5 xxx).
Research & Applications *If the student is taking a research project/thesis they will have to take 9 courses all together with 6 credit hours of research project.	BIO 5101, BIO 5102, BIO 5201, BIO 5202, Elective (Thesis), Elective (BIO 5xxx).

Table 2.5: Courses versus Outcomes[15]

Standards 2-3: Mathematics and Basic Sciences Requirement

Not applicable.

Standard 2-4: Major Requirements by Accreditation Body

HEC has issued NOC for MS Biosciences program. Major requirements of HEC as specified in "Curriculum of MS Biosciences" 24 credit hours of theory and 6 credit hours of research and at least 2 PhD faculty members in the program.

[14] Table 2.4 of PT Report is the Table 4.4 (Curriculum Course Requirements) of AT Report
[15] Table 2.5 of PT Report is the Table 4.5 (Curriculum Course Requirements) of AT Report

Standards 2-5: Humanities. Social Sciences, Arts, Ethical. Professional & Other Requirements

Not applicable.

Standards 2-6: Information Technology Content Integration throughout the Program

Not applicable.

Standards 2-7: Communication Skills (Oral & Written)

a. List the courses required by the Accreditation Body

Program	Core Courses	Practical Skills	Written Skills
MS Biosciences	BIO5101	X	X
30 Credit	BIO5102	X	X
Hours	BIO5201	X	X
	BIO5202		X

Table 2.6: Courses required by Accreditation Body

b. Describe how they are applied in the program.

Research paper presentations and review paper presentation are assigned to students in above mention course from relevant different topics in interactive sessions improve their oral and communication skills. Written skills are enhanced by giving assignments such as review article and research article writing

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

Standard 3-1: Lab Manuals / Documentation / Instructions

There is generous amount of equipment's available for MS students to study there and collect research data. There are two General labs one at campus 154 and one at campus 172 for MS students and there is additional lab at 172 campus dedicated for research. Computer lab-6 at 90 campus is used for Biostatistics.

Labs are open to all students for their research from 8:00am to 8:00pm from Monday to Saturday.

To ensure the safety and facilitation of students Lab attendant are available to assist them in their research work.

To handle sudden and abrupt power interruptions we have backup generator facility for all the labs.

Lab Schedule is maintained for students to work in adequate time in Labs in the presence of lab assistants and supervisor faculty

Lab Title	Lab 1 and 2
Location	154 and172 campus
Objectives	To extract DNA from tissue specimen and Agarose Gel Electrophoresis of DNA and Polymerase chain reaction
Adequacy for instruction	Adequate for 30 students at a time. Chemicals and reagents are available to carry out experiments. Projector available from Academics office on request by course instructor.
MS Biosciences Courses taught	Techniques in biomolecule analysis.
Software available	Gel Documentation system with software installed on PC
Major equipment	Magnetic stirrers, water bath and shaking incubators, pH meters, refrigerated centrifuge and spectrophotometers, horizontal electrophoresis units and power supply are available for the lab exercise and thermal Cycler.
Safety	Available

Table 3.1: Labs Information

Lab Title	Lab 1 and 2
Location	154 and172 campus
Objectives	Extraction of proteins from Tissue specimen, SDS PAGE for proteins and Gel Chromatography
Adequacy for instruction	Adequate for 30 students at a time. Chemicals and reagents are available to carry out experiments. Projector available from Academics office on request by course instructor.
MS Biosciences Courses taught	Techniques in biomolecule analysis.
Software available	Gel Documentation system with software installed on PC
Major equipment	Magnetic stirrers, water bath and shaking incubators, pH meters, refrigerated centrifuge and spectrophotometers, vertical electrophoresis units and power supply are available for the lab exercise
Safety regulations*	Available and communicated

Table 3.2: Labs Information

Lab Title	Bioscience Lab-1 and bioscience lab-2
Location	154 and172 campus
Objectives	Chromatography
Adequacy for instruction	Adequate for 30 students at a time. Chemicals and reagents are available to carry out experiments. Projector available from Academics office on request by course instructor.
MS Computing Courses taught	Techniques in biomolecule analysis.
Software available	NA
Major equipment	Gel chromatography setup with columns is available.
Safety regulations*	Available and communicated

Table 3.3: Labs Information

Lab Title	Computer lab-6
Location	100
Objectives	Biostatistics
Adequacy for instruction	Adequate for 24 students at a time. 25 desktops systems. Projector available
MS Biosciences course taught	Biostatistics
Software available	SPSS and MS Excel
Major equipment	25 Desktops with 8 GB RAM per workstation, 1 HP Color Laser, 1 HP Laser printer and 1 HP Scanner. Laboratory is also equipped with high Band width of Internet connectivity for research projects.
Safety regulations*	Available and communicated

Table 3.4: Labs Information

*Safety regulations are communicated through the Student Handbook.

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

Instructions are clearly written on the Notice boards pertaining to:

- Personal protective equipment
- Lab Manuals
- MSDS of the chemicals
- Rules and Regulations for Lab usage
- Lab classes Schedule

b. Are the resources available sufficient for the program?

No, there is urgent need of lab up gradation in terms of equipment and infrastructure.

Standard 3-2: Adequate Support Personnel for Labs

Indicate for each Laboratory adequate support personnel, level of support, nature and extent of instructional support

Laboratories are furnished with a reasonable number of professional personnel's to provide continuous support to labs, students and faculty. They are constantly guiding students in:

i) Lab orientation and how to work in lab

ii) Bio-safety in laboratory

iii) To carry out experiments/practical session of the course.

A total of 3 dedicated lab staff members and two lab attendants are working at different time slots to ensure continuous support to faculty and students.

The hierarchical levels of Lab staff are as follows:

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 3.5: Labs Information

Biosciences lab shifts per lab	Time slots	Personnel
Morning	8.00am – 2.00pm	3
Evening	2.00pm – 6.00pm	2

Table 3.6: Biosciences Lab Shifts

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	20
2	Desktop Computers	296
3	Video Conferencing Equipment	1
4	Color Scanners	3
5	Printers	10
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 Devices, Multimedia Equipment and a rich Software Library.	

Table 3.7: Computer Equipment Available

b. Are there any shortcomings in the computing infrastructure and facilities?[16]

On the basis of above information it is clear that the computer lab facilities are sufficient and up to par for the MS Bioscience Program at SZABIST. There should be projector screens instead of white boards because students are unable to see clearly due to reflection of light of multimedia.

[16] Source of information is: Head of IT, Manager Systems, Computer lab staff.

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[17]

Standard 4-1: Sufficient Frequency of Course Offering

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

MS Biosciences at SZABIST is a two-year program spread over four semesters and consists of 30 credit hours of teaching. The curriculum includes 8 courses (4 core and 4 elective courses) of 3 credit hours each and research project (Thesis) of six credit hours. Students can also take two additional courses in lieu of Thesis in order to complete the total credit hours. The maximum time limit to complete the MS degree is 5 years. If 33% of total class strength wishes to repeat the course then the department offers the same course again. The department continually reviews course and curriculum to make them market competitive. Generally, the class strength is 15 to 30 students.

b. Explain how often required courses are offered.

The details about course offering are provided below:

- All courses are offered as per course plan.
- Courses are offered in alternate semesters.
- In case of large number of failures in a course, course is repeated in subsequent semester.
- If students require a specific elective course then that course is offered as and when required provided it satisfies the minimum number of student's criteria.
- Courses are offered in summer.
- Research courses are offered in every semester to facilitate students.

c. Explain how often elective courses are offered.

Elective courses are offered from the second year i.e. third semester in MS-Biosciences for specialization. Students select from the given set of electives courses depending on their field of specialization in the discipline of Biosciences.

d. Explain how required courses outside the department are managed to be offered in sufficient number and frequency.[18]

MS-Bioscience is the specialized field and its courses differ from other fields except Advanced Research Methodology (core course). For this program there is in house permanent faculty and

[17] Source: EDC, Student handbook 2015 and Prospectus 2015.
[18] Information is provided by Program Manager-MS-Biosciences.

the Institute also availed the services of Industry professionals and external faculty members to teach courses as well.

Standard 4-2: Effective Faculty and 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.

The department achieves student / faculty interaction through class room discussions where faculty spares exclusive counseling time for individual students. Each faculty, visiting or full time allocates and spends extra time outside the classroom with students so as to counsel them. Guest speaker sessions are arranged to improve students' exposure towards professional attributes.

Standard 4-3 Professional Advising and Counseling

a. **Describe how students are informed about program requirements.**

Students are Information about program requirements are disseminated through releasing circulars on notice boards, emails, SMS through ZABESK prospectus, brochures, student hand book, admission department, program heads, Facebook official page, orientation, student societies and SZABIST website.

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

The advising services are provided through Executive Development (EDC) run by SZABIST which provides guidance to students regarding their career and availability of internships. Faculty and program managers arrange seminars, orientations and advisory workshops. Students/participants are asked to fill in questionnaire and survey forms which help in assessing the effectiveness of these sessions.

c. **Describe the students counseling system and how students get professional counseling when needed.**

All faculty members, Program Manager and HOD post counseling hours on ZABDESK and on notice boards. During this time student can contact faculty if feeling problem in studying. In addition, faculty members are available on prior appointment.

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

Students can access EDC, student advisors and faculty. The department arranges professional seminars, workshops and trainings for students in order to interact with market professionals.

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

Students also interact with practitioners in seminars and workshops arranged by faculty members and the student council societies. EDC is dedicated to provide opportunities for students to guide them to be successful in their professional as well as personal life. We facilitate students to adapt to new and developing circumstances that challenge their academic and professional growth as they progress through each grade. Such support may include academic guidance, career counseling, professional grooming, and student support.

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 Criteria

a. Describe the Program Admission Criteria and Process[19]

For admissions in the MS-Biosciences program, candidates must possess 16 years of education in any field of life/biological sciences with minimum 55% marks/CGPA 2.5 from a university recognized by HEC. GAT (General) is mandatory for MS students with minimum 50% score.

Note:

- All applicants will be required to appear in entrance test and interview/group discussion at SZABIST.
- General paper (A Levels) will not be counted.
- Equivalency from Inter Board Committee of Chairmen (IBCC), if applicable.
- Verification of last degree from Higher Education Commission of Pakistan, (HEC).
- Students waiting for results can also apply.

[19] SZABIST Prospectus 2015

b. The Admission Process Flowchart

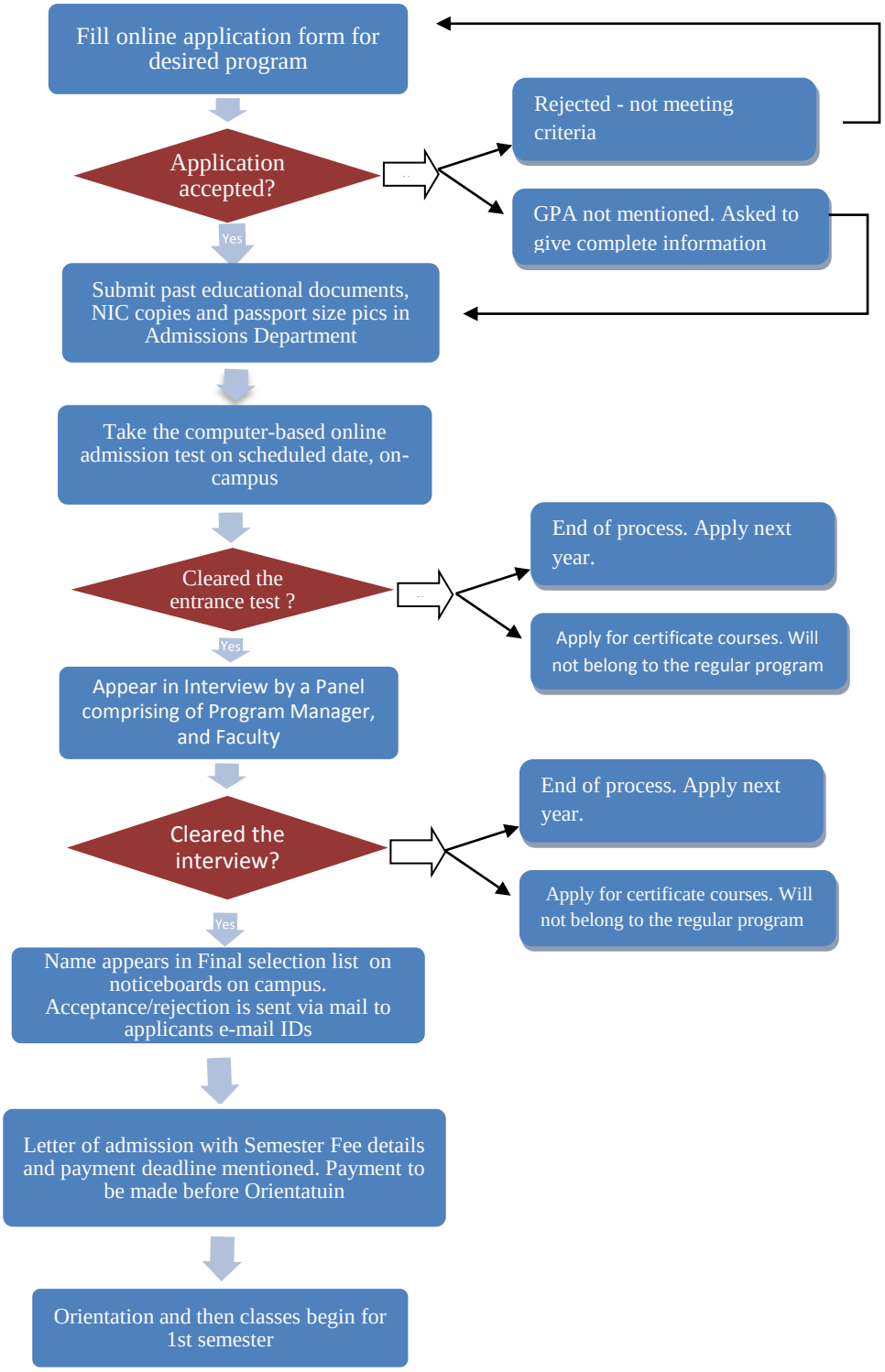

Figure 5.1

c. Describe Policy Regarding Program/Credit Transfer.

A maximum of up to 50% credits may be considered for transfer into MS-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 process are reviewed in the Academic Council meeting, which is held at least twice a year and Academic Heads meeting once a month.

Some of the positive changes 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.

Standard 5-2: Registration and students

a. Describe how students are registered in the program.

Students must register through ZabDesk, the automated SZABIST Online Registration System. The Academics department sends an email to the committee and SMS to student e-groups, and puts up notices on boards all over campus, explaining the ZABDESK registration process, the last date for registration and the fine for late registration.

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

Online registration is closed one to 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. A deadline for late registration is maintained after which no registration is be allowed.

Students who have not registered are not allowed to attend classes. Registered Students who have paid the fee but have remained absent for three classes are forced to de-register from the course during the fourth week.

Termination of Registration Process

During the first semester only one course withdrawal is allowed. For second semester and onwards, withdrawal of maximum two courses is allowed. The request for withdrawal has to be made prior to the twelfth session through ZabDesk's Online Course Withdrawal Process.

The request for withdrawal has to be approved by the Academic Controller, Program Manager and Records Department. In case of withdrawal, a letter grade of W (with no grade points) is awarded.

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

Monitoring Student Progress:

1. **Attendance:** Students are required to maintain 80% attendance throughout the semester in order to qualify for the final exam. Maximum 3 absences are allowed per semester per course. Two late arrivals are equal to 1 absence. In case of non-compliance of attendance rules, a letter grade F will be given in the course.

2. **Mid-term and Final Examination Policy:** A mid-term exam is administered in the 8th session. The mid-term exams account for 20-25 percent of the final grade and the maximum duration is 2 hours.

   The Final Exam is generally of two-and-half to three hours duration. Please note that depending on the course content, test/examinations could be a combination of written and practical or multiple choice questions.

   Term papers and projects can be 10-20%, depending on the course content while a deviation of 10% is permissible at the faculty's discretion.

3. **Passing Grades:** Minimum passing grade in each course is B minus. F grade in a course does not count as having met the pre-requisite for taking an advanced course. Student with 'repeat grades' such as D, F must take the course next time as it is offered.

   Student may get attendance waiver in D grades, provided the same faculty member is teaching the course. Otherwise attendance waiver approval is required from the Program Manager/Dean.

4. **Probation & Dismissal on Academic Grounds:** Students securing a CGPA below 2.00 will be put on probation and a warning letter will be issued. Unless the semester GPA is

brought to 2.00 by the end of the next semester, the student will be dropped from the program.

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

Evaluation of Registration and Student Monitoring Process

The Student Registration and Student Progress Monitoring processes are regularly reviewed in the ZABDESK through Program Managers. Academic Heads meeting, held once a month. Any necessary amendment in policy and resolving of individual cases is carried out at these meetings.

In the past one year, the course registration process has been improved. The speed and rate of timely registration by students has been made possible via stringent monitoring of registrations and maintaining strict deadlines and enforcing a hefty fine for late registration. Due to this improvement, class allocation is more accurate and records are updated well in time.

Standard 5-3: Faculty Recruitment and Retention Process

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

Process of Recruiting and Retaining Highly Qualified Faculty Members[20]

Faculty Recruitment Process: Currently the practice is that the Human Resource department of SZABIST advertises the faculty positions every semester through leading newspapers, and SZABIST website for online applicants. Human Resource department sets up a committee for short listing 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. It will be a mandatory demo lecture. At the end of the lecture and based on the evaluation criteria, faculty will hired and HR will send them the offer letter for faculty position.

Improvement in Faculty Recruitment Process: Advertisements to recruit new faculty have been rephrased to ensure further self-screening of applicants. Now 2 years university teaching experience is an eligibility criterion. Also attested copies of degrees are a mandatory requirement for applying. This improvement has reduced the applications from 2500 (mostly irrelevant) to approximately 600 relevant, more highly eligible applications.

[20] Source of information is HR Department.

b. Faculty Recruitment Process

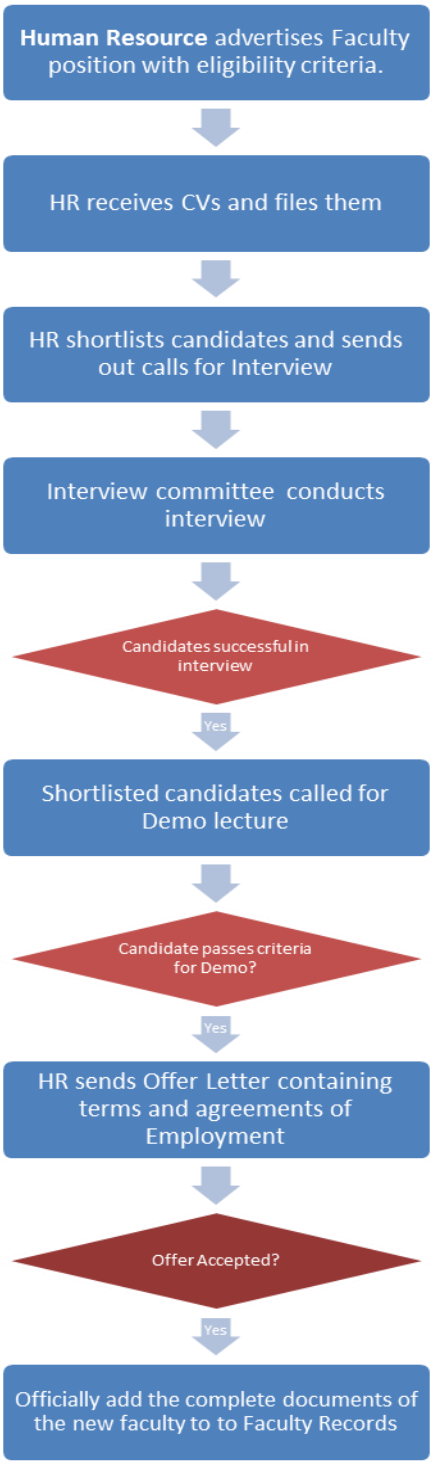

Figure 5.2

c. Indicate methods used to retain excellent faculty members.

Faculty Retention Methods and Measures[21]

Academic committee will evaluate the faculty every semester with assistance of Human Resource department. If the evaluation of the faculty is satisfactory he/she will be confirmed as full time faculty.

SZABIST offers the following valuable intrinsic and extrinsic incentives and rewards for faculty retention:

a. Highly competitive salary packages.
b. Flexible working hours within a given work week.
c. Newly hired faculty is eligible for the Continuing Education once probationary period is completed.
d. While doing PhD under Continuing Education benefit, faculty may get promoted and salary may be revised.
e. Car Loan Financing
f. Provident Fund
g. Annual Bonus
h. Annual raise to counter inflationary effect.
i. Performance Increment policy
j. Capacity Development programs/ workshops
k. Fully funded trip for presenting own research paper at any Research Conference within Pakistan (once in a year).
l. Partially funded trip to an international research conference to present a research paper, (once in 3 years).
m. Health benefits
n. Publication honorarium,
o. Thesis and dissertation advisor / committee member honorarium and much more.

[21] Sources of information: Dean of Program, HR Department

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

The Faculty Evaluation and Promotion Process are duly in line with SZABIST's Mission Statement.

In order to support the mission, Dean/Head of department evaluate their faculty members annually. 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 used for promoting 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.

The deserving faculty members also get merit increment and appreciation besides promotion. The faculty members who are well qualified but not able to achieve the goals assigned by the Dean/Head of the department are properly trained.

Hence, Evaluation process at SZABIST 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.

Improvements in the Faculty Evaluation and Promotion Process

In Academic Council and Academic Heads meeting the faculty evaluation and promotion processes are discussed. Academic Council meeting held semi-annually and Academic Heads meeting conducted on monthly basis.

Teaching Evaluation is conducted before mid-term examinations. All faculty members are expected to achieve at least 80% evaluation in all courses (60% maximum in one course as an exception). All full-time faculty members will be re-evaluated for a second time in the following semester. Further improvements in the past year have been made in the official procedure.

Performance Appraisal Forms have been amended. Moreover, training of employees and appraisers is under considered by HR department for better understanding of evaluation criteria by all concerned. The faculty evaluations results are reviewed and the Promotion 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.

Process and Procedures used to ensure Active Learning and that Courses' Learning Outcomes are met through:

Class size is limited to only 30 students, which allows the delivery of high quality education on an interactive basis. Teachers pay attention to individual students and encourage participation and constructive discussion.

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. Live projects
ii. Guest speaker sessions
iii. Workshops
iv. Group assignments
v. Term reports based on industrial visits, interviews with company executives and corporate analysis.

As the activities sighted above are intended for a very mature student body, a high level of research orientation is incorporated in all the activities Class size is limited to 30 students, which allows the delivery of high quality education on an interactive basis. The teachers' pay individual attention and encourage participation and constructive discussion. All class rooms are air-conditioned and equipped with overhead projectors, wall-mounted screens, white boards and multi-media projectors, PCs, and Internet connectivity. The above mentioned are also planned in line with the Learning Outcomes that are clearly stated in the Course Outline at the beginning of the semester.

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

Classroom Assessment focuses the primary attention of teachers and students on observing and improving learning, rather than on observing and improving teaching.

Experienced faculty members mentor new teachers so that they can deliver well during the class. The program manager is also there to facilitate the teachers as well as students. Teachers are oriented about the rules and policy changes if any at the start of each semester and are provided guidelines.

Every semester in the 5th week all the faculty members are evaluated by the students for their methods of teaching and delivery of course material.

The Vice President Academics gives his comments on all the evaluations and then forwards them to relevant the Program Managers.

If a faculty member scores less the 60% in the evaluation, the Program Mangers informs him/her about the scores and allots time for improvement. After two weeks they 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

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

Minimum CGPA to graduate is 2.75 for MS-Biosciences.

MS-Biosciences Program	Requirement for Completion of Degree
MS-Biosciences 30 credit hours	• Duration of MS-Biosciences is 2 years • Course work of 24 credits (8 courses) is needed which includes core courses and electives. • Research Project (Thesis) 06 credits. Students can also take two additional courses in lieu of Thesis in order to complete the total credit hours. • Max duration to complete this degree is 5 years

Table 5.1: Requirement for Completion of Degree

One year is the maximum time allowed to a student for improving grades after completion of coursework. The maximum time allowed to complete the graduate program is 5 years. Without completing all degree requirements, including, clearance of financial dues, completing the required courses and Thesis, the degree is not awarded.

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

Periodic Evaluation of above Procedure and its Improvement

The monthly Academic Heads meeting, the bi-annual Academic Council meeting and the bi-annual meeting of the newly formed Board of Studies, regularly discuss, evaluate the procedures that ensure completion of degree program requirements. These discussions lead to improvements and amendments in the 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: Faculty Qualifications and Number

a. Faculty resumes in accordance with the format in Appendix B of the Self-Assessment Manual

Launched

b. Faculty distribution by program's areas

Permanent Faculty members at Biosciences

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 6.1: Permanent Faculty members at Biosciences

Faculty Distribution by Program Areas[22]

[22] Table 6.2 of PT Report is Table 4.6 (Faculty Distribution by Program's Areas) of AT Report

Faculty and Program area of specialization	Courses in the area and average number of sections per year	Number of faculty members in each area		Number of faculty with Ph.D. degree	
		Permanent	Adjunct	Permanent	Adjunct
Dr. Hammad Afzal Kyani Advanced Research Methodology	5 courses / section	1		1	
Dr. Kashif Ali Techniques in Biomolecular Analysis	5 courses / section	1		1	
Dr. Sumera Ali Biostatistics	5 courses / section	0	1		1
Dr. Zulfiqar Naqvi Molecular Genetics	5 courses / section	1	2	1	2

Table 6.2: Faculty Distribution by Program Areas

* In existence there are 9 permanent faculty members, however some of them specialize in multiple fields and are shared across specializations of the program.

* In existence there are 3 permanent PhD faculty members having command in multiple fields, hence they are shared across specializations of the program.

Standard 6-2: Current Faculty, Scholarly Activities and Development

a. Describe the criteria for faculty to be deemed current

The criteria for the faculty to be current:

1. Use current contents for teaching
2. Show involvement in the professional activities taking place in the campus
3. Participating in academic events like seminars/sessions
4. Participating in academic and industry conferences / workshops
5. Presenting and publishing papers in conferences
6. Publishing research papers in local and international journals
7. Publishing articles in newspapers and magazines
8. Conducting trainings and workshops

9. Supervising research at bachelors and masters level
10. Pursuing further education in their specialized field
11. Incorporating their research and otherwise learning into their teaching through content and methodology

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

SZABIST creates time and space for faculty to concentrate on priority faculty duties, to better integrate their competing faculty roles of teaching, scholarship, and service, and to achieve greater balance in their personal and professional lives. For professional development purposes, full time faculty members are eligible to enroll in Postgraduate programs free of charge. Additionally, faculty members are encouraged to actively participate in research activities through incentive of reduced teaching load.

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

For professional development purposes, full time faculty members are eligible to enroll in Postgraduate programs free of charge. Additionally, faculty members are encouraged to actively participate in research activities through incentive of reduced teaching load.

Faculty is permitted to go on "study-leaves" overseas to attain scholarship in their respective discipline.

Additionally, faculty is nominated to attend seminars and workshops routinely held within Karachi city and nationally with full cost of travel and daily allowances to update and enhance their knowledge in their core teaching areas Further more faculty is entitled to get 50% funding for attending international research conferences and research related workshops.

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

Every month an academic heads meeting involving Deans/Head of Departments and coordinators of all programs is held, this meeting is presided by Vice President (Academics). Additionally, regular meetings are scheduled between faculty, program coordinator and Head of Department to address any academic and administrative issues, thereby ensuring smooth running of the program. Furthermore, for each course faculty evaluation is carried out using students' feedback and in light of this feedback coordinator interacts with faculty to optimize student's learning experience.

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 casual leaves
- Performance-based increment and annual bonus
- Loan facility
- Continuing Education
- Car/Bike loan facility without any interest
- 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 at SZABIST.
- 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 annual bonuses motivate employees to work effectively and efficiently.

c. Obtain faculty input using faculty survey on programs for faculty motivation and job satisfaction.[23]

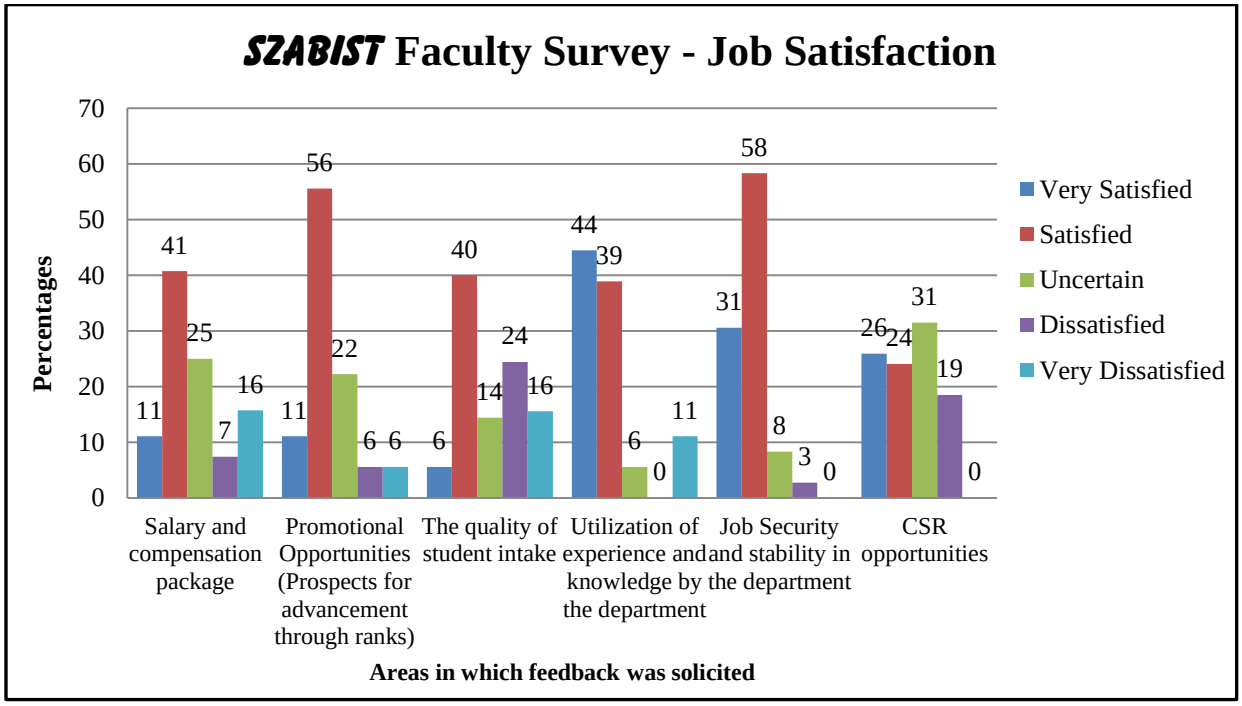

Figure 6.1

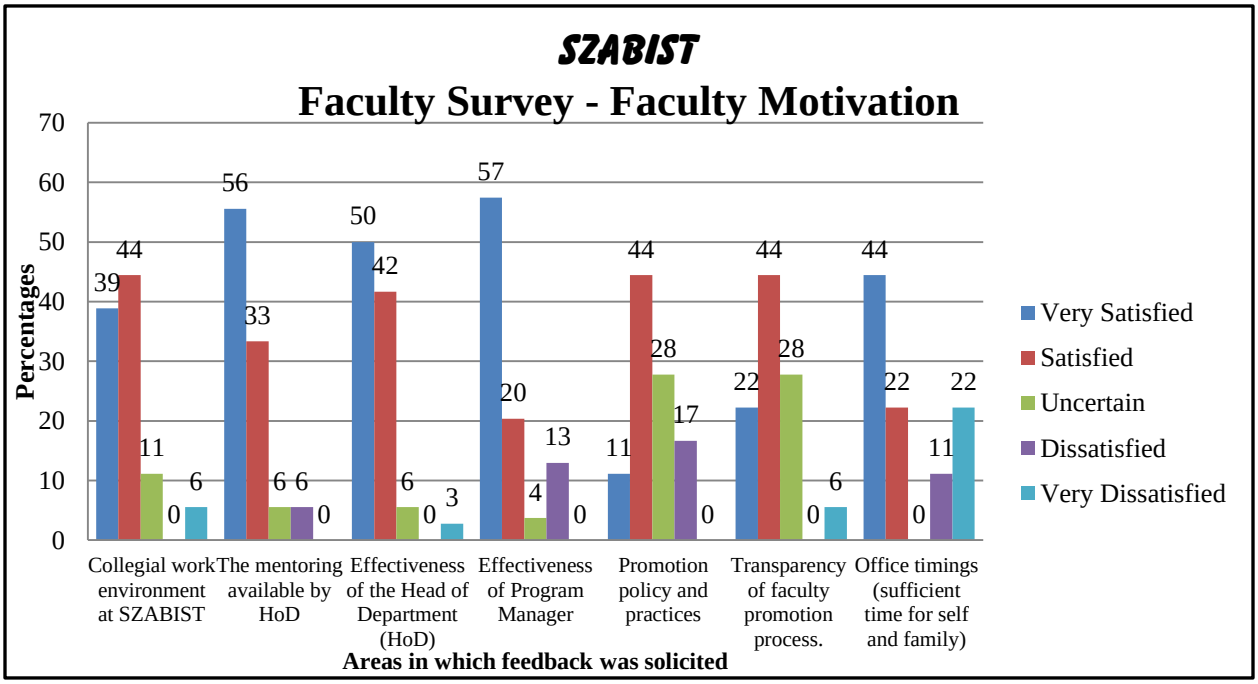

Figure 6.2

[23] The source of information is Faculty Survey.

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

a. Describe infrastructure and facilities that support new trends in learning. [24]

The following details the infrastructure that is in place to support the new trends in learning12.

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 Devices, Multimedia Equipment and a rich Software Library.	

Table 7.1: Facilities

The above equipment in conjunction with different software's like TeamViewer, Skype, VNC etc. is used for conducting video conferences, online seminars, inter campus seminars and trainings etc. E-learning infrastructure is in place and is used as and when the need arises. Also, different seminars and conferences conducted by HEC are also accessible to students using the above infrastructure.

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.

[24] 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 and Staff[25]

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. Biosciences Books	**57**	
	B. Reports	**6**	
	i. Thesis		6
	C. Journal/Magazines (Subscribed)	**50**	
	D. Newspapers (Daily)	**09**	
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	
	• ***EBRARY***	Yes	

[25] The source of information is Librarian.

	• ***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

1. Respond to daily-on-site reissue requests for books.
2. Train library users to effectively search the Library catalogue, Internet and other electronic resources.
3. Book and other reading material lending services
4. Receiving and persevering all reading material
5. Information access in digital form
6. 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 Class-rooms & Offices Adequacy[26]

a. Describe the adequacy of the classrooms

Class rooms are well equipped with:

[26] The sources of information are Student handbook and Prospectus 2015.

1. Multimedia projectors
2. PCs' with internet connections
3. Sound systems
4. Uninterruptible Power Supply (UPS)
5. Air Conditioners/ Fans
6. Surveillance Cameras
7. Chairs
8. Rostrums
9. White Board
10. Pc Trollies
11. Tube Lights
12. Blinds
13. Wall Clocks and
14. 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[27]

a. Describe how your program meets this standard. If it does not explain the main causes and plans to rectify the situation.

Permanent faculty is being hired on handsome salary package, which includes basic salary, conveyance medical and house rent allowance.

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

Also on semester/Annual progress report and recommendation on excellent work or achievement for SZABIST, salary is increased or some award in the shape of money is awarded to him or her.

After three years of successful teaching in SZABIST, loan facility can also be used by the faculty.

After the completion of the permanent faculty probation period (i.e. 6 months), 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[28]

There are 18 dedicated academic staff members who provide secretarial and technical support to the Management Science department. The support includes:

1. Class Management
2. Attendance Sheet Circulation
3. Time Table Maintenance
4. Schedule Circulation
5. Notification Circulation to both students and faculty members about classes, seminars, workshops and the like.

Rooms are allocated for permanent and visiting faculties where latest Intel Core to i7 PCs are available with full internet facilities, Wi-Fi, printers, digital library access, landline extensions, split air conditioners, UPS, shelves display boards to display their objectives and schedules, and other necessary stationeries and equipment. Moreover, it is essential for all the faculty members

[27] The sources of information are HR Department, and Vice President (Academics). For further details please see section 5-3 and 6-3.
[28] The Source of information is Academic Staff

to display their semester schedule on their doors for students' consultation and faculty's availability.

Standard 8-2 Number and Quality of GSs, RAs and PhD Students[29]

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

Not Applicable on MS-Biosciences program.

b. Provide the faculty: graduate student ratio for the last three years

Not Applicable on MS-Biosciences program.

Standard 8-3 Financial Support for Library and Computing Facilities

a. Describe the resources available for the library[30]

Particulars	Budgetary Allocation (Rupees)
	2015-2016
Library	617,000

Table 8.1: Resources available for the library

b. Describe the resources available for laboratories.

Particulars	Budgetary Allocation (Rupees)
	2015-2016
Laboratories	220,000

Table 8.2: Resources available for the laboratories

c. Describe the resources available for computing facilities.

Particulars	Budgetary Allocation (Rupees)
	2015-2016
Computing Facilities	489,750

Table 8.3: Resources available for the computing facilities

[29] The sources of information are ZABDESK and HR Department.
[30] The information is provided by Finance Department

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SZABIST

SELF-ASSESSMENT REPORT

MS- Biosciences

Program Self-Assessment Checklist

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

Guidelines for Program Team Report and QEC Review

Program: MS- Biosciences

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	N/A		
	c. Alumni survey	N/A		
	d. Graduating student's survey	N/A		
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 yrs) **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	N/A		
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.	N/A		
Standard 2-6	Information Technology Content Integration Throughout the Program			
	a. List the courses required by the Accreditation Body.	N/A		
	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	N/A		
	b. Provide the faculty: graduate student ratio for the last three years	N/A		
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

MS- Biosciences

Assessment Team Report

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

ASSESSMENT TEAM REPORT

MS- 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. Ayesha Latif Shaikh
ii. Dr. Hammad Afzal

2. Date of Nomination

4th June, 2016

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

Twenty five (25) days

4. Name of Department and Program being assessed

Biosciences and Master of Science in Biosciences (MS-Bio)

5. Shortcomings of the PT report

The shortcomings of the report have been discussed in detail below. The report overall requires small and major edits in most of the criteria. Below are the points of edits and amendments.

- Standard 1-1: Mission Statement of Biosciences Department- "Our goal is to prepare graduates for successful biological sciences professional careers and leadership roles with lifelong learning…."

  Correct version: "Our goal is to prepare graduates for successful *careers in biological sciences* and leadership roles

- Standard 1-1: b. Program Objectives # 3- Error in sentence coherence.
  Correct Version: "Students will be able to independently write research grants and address gaps in the field of biological sciences. Using his/her enhanced knowledge; skill set the students will help the industry in formulating innovative methods via research and development**.**

- Standard 1-1: c. Program Outcomes # 5 – Repetitive and needs cropping.
  Correct Version: The ability to develop solutions in various disciplines of life sciences.

- Standard 1-1: c. Program Outcomes # 6 – Incomplete.
  Correct Suggested Version: "Final year thesis enables students to designs experiments for small and large scale research projects. Moreover, it helps students produce research papers addressing gaps in the field, which can be presented in conferences and published in reputed journals.

- Standard 1-1: d. Objectives aligned with Mission Statements. All the objectives have been aligned with outcomes NOT WITH MISSIONS.

- Standard 1-1: e. Elements of Strategic Plan # 5 – Too vague and general. Add program specific strategies being used for co-curricular learning like seminars, workshops, guest speaker sessions held (if any) etc.

- Standard 1-1: f. Program Objective Assessment (Table 4.1) – Additional points suggested
  Suggested Points: Improvement / Issues point - # 3 in column: Add that… Workshops can be conducted on methods and techniques of research writing and on conducting bio-experiments.
  Suggested Points: Improvements Made - point #2 in column: Add the names of specific institutes with which lab resource sharing is being availed.

- Standard 1-2: a. Program Outcomes and Objectives Matrix- Error in Table 1.3
  There are six Program Outcomes and only three are shown in the table.

- Standard 1-3 a. Describe the action taken based on the periodic assessments. Point # 1 – Grammatical error
  Corrected Version: "....submit course outline and syllabus to the departmental head which passes through the mechanism of course assessment."

- Standard 1-3 a. Describe the action taken based on the periodic assessments. Point # 6 – Grammatical error
  Corrected Version: "….is held biennially to periodically evaluate."

- Standard 1-3 b. Describe Major Future Program Improvement Plans.
  Point # 1 – Lacks details
  Corrected Version: "….contribute significantly in improvement of the programs in terms of courses offered, course content, exam paper moderation and so on."

Point # 3 – Too vague. Connect this point to Improvement #3 given in table on Pg. 12.

- Footnote on Page 15- Point # 6: Spelling mistakes as well as facts need to be updated.
  Corrected Version: "….Fall 2015 and no dropout took place…and drop out stood at 2..."

- Standard 2-1: f. Courses versus Outcomes – Error in Table 2.4
  There are six Program Outcomes and only three are shown in the table.

- Standard 2-2: a. Table 4.5 Standards 2-2 requirements – Edit needed.
  Corrective Action: Theoretical Background courses ***should not*** contain Elective (Thesis). As the purpose of *Thesis* is not to gain theoretical knowledge but to undertake applied research.

- Standards 2-3: mathematics and Basic Sciences Requirement – Relevant information missing.
  Corrective Action: Add the course named "Biostatistics" under this standard.

- Standards 2-5: Information Technology Content Integration throughout the Program- Relevant information missing.
  Corrective Action: Courses that have IT content should be listed and detailed here. For e.g. the course that contains SPSS software learning and usage and the course that contains Gel Documentation System learning and usage.

- Standard 2-7: b. Describe How They are Applied in the Program – Grammatical mistake.
  Correct Version: "….assigned to students in above mentioned courses from relevant different topics in interactive sessions to improve their oral and communication skills.

- Standard 3-1: b. Lab Manuals / Documentation / Instructions – Grammatical mistake in para 3.
  Correct version: "…facilitation of students**,** Lab attendant**s** are available to assist them…"

- Standard 3-1: b. Lab Manuals / Documentation / Instructions
  Table 3.1, 3.2 & 3.3 all need to update the information about projectors in labs, as the updated information is that Projectors have been installed in all the bio science labs

  Table 3.3 Needs clear specification. Write Not Applicable instead of NA.

- Standard 4-3: a. Describe How Students are Informed - Poor Sentence Construction, incorrect ordering of points.
  Correct Version: Students are informed about program requirements through Prospectus, Admission Department, Brochures, SZABIST website, Orientation, Student handbook, Circulars, Student Societies, SZABIST Face book page.

- Standard 4-3: b. Describe the Advising System – Ordering of points not preferable.
  Correct Version: Paragraph 1: Program managers actively advise and guide about course load management, selecting electives, and choosing research advisors.
  Paragraph 2: What is in paragraph one should now be in paragraph .?

- Standard 4-3: e. Describe Opportunities Available for Students to Interact – Wrong Word Choice
  Correct Word: "….and professional growth as they progress through each semester."

- Standard 6-1: Table 6.2 – Asterisks below the table have no corresponding asterisks in the table.

6. Comments on:

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

The report shows adequate relevance and comprehensiveness of the responses / standards except for the flaws and shortcomings already highlighted in the previous section.

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

Authenticity has been established by quoting the sources of information at all relevant places in the report.

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

Moderately adequate, however, elaboration is required in some parts. Secondly, in light of the fact that the program is in its second year after launch therefore, some of the surveys stand non-applicable.

iv. Observations made during the assessment

Standard 3-1: b. The answer needs elaboration.

1. In order to sustain this program in the long run, there is an urgent need to address equipment and infrastructural deficiencies. Therefore, PT team should elaborate this part.

v. Strengths and weaknesses of the Program

Strengths:

- Market value of this degree is rising due to its impact on mid-career opportunities for promotion and progress in the field of bio sciences, pharmacology, pharmaceutical engineering, hospital management, public health management areas

Weaknesses:

- Criterion 7: Institutional Facilities: Inadequate.

This program urgently need greater number of customized, dedicated bio sciences lab facilities and specialized equipment to facilitate the MS Students work requirements.

- Standard 7-2: Library Collection and Staff: Inadequate.

There are only 57 books related to the discipline of Biosciences. This number must be increased to an required and acceptable level.

- Standard 7-2: Library Collection and Staff: Inadequate.

Number of indexes and journals and publications catering specifically to Bio Sciences discipline are lacking. Those that are recommended for subscription based access for SZABIST are: "Nature" publishing group; ACS – American Chemical Society (index).

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)	**25**				
Score 1 **(S1) = [TV/(No. of Questions *5)] *100 *Weight**		**4.167**				
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)	**32**				
Score 2 **(S2) = [TV/(No. of Questions *5)] *100 *Weight**		**16**				

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)	**6**				
	Score 3 **(S3) = [TV/(No. of Questions *5)] *100 *Weight**	**4**				

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)	**13**				
	Score 4 **(S4) = [TV/(No. of Questions *5)] *100 *Weight**	**8.67**				

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)	**51**				
	Score 5 **(S5) = [TV/(No. of Questions *5)] *100 *Weight**	**13.91**				
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)	**30**				
	Score 6 **(S6) = [TV/(No. of Questions *5)] *100 *Weight**	**12.86**				

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)					**10**
	Score 7 **(S7) = [TV/(No. of Questions *5)] *100 *Weight**					**10**

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)					**8**
	Score 8 **(S8) = [TV/(No. of Questions *5)] *100 *Weight**					**12**

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

= 81.60

C. Assessment Results Implementation Plan Summary-MS-Biosciences-Karachi Campus

AT Findings	Corrective Action	Implementation Date	Responsible Body	Resources Needed
Lack of easy access to essential research data causing setbacks and delays in research efforts	It is suggested that faculty should have complete access to research journals	June 2017	SZABIST Administration	Purchase access to more journals by PERN
Number of indexes and journals and publications catering specifically to Bio Sciences discipline are lacking.	It is suggested that SZABIST should acquire the subscription of highly accessed biological and Life sciences journals.	June 2017	SZABIST Administration	Purchase access to more journals by PERN
Program related titles and number of books are too low	It is recommended that relevant books and journals are acquired soon.	June 2017	SZABIST Administration	Finance required for the procurement of books
Program related workshops and seminars	It is recommended that at least one workshop/seminar be conducted per semester.	June 2017	HOD and Program Manager	Finance, space for conducting a workshop

President's Comments :
The Self-Assessment process of the new program-MS Biosciences would help us in identifying the shortcomings, completion of the required documents and taking corrective actions for the improvement of the program. It is highly recommended that the concerned authorities ensure the implementation of the identified corrective actions as it will augment the quality and standards of MS-Biosciences program. I appreciate the efforts rendered by the Program Team, Assessment Team and QEC staff for the preparation and completion of the Self-Assessment Report of MS-Biosciences program.

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: As the MS-Biosciences program is new, the assessment of the program has highlighted areas for improvement. The implementation of the Assessment Team's recommendation will improve the quality of the program and would enhance the overall educational experience of the students. The IR/QEC staff is confident that the implementation of the corrective actions will strengthen the market standing of the program, enhance students' overall educational experience and would help them in exploring new opportunities in corporate sector. The process reached its destination with the support of the Head of the Department, efforts of the Program and Assessment Teams, and commitment of the IR/QEC staff.

Name and Signature:

Ms. Faryal Shahabuddin

Ms. Mahwash Imran

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

President's Comments :
The Self-Assessment process of the new program-MS Biosciences would help us in identifying the shortcomings, completion of the required documents and taking corrective actions for the improvement of the program. It is highly recommended that the concerned authorities ensure the implementation of the identified corrective actions as it will augment the quality and standards of MS-Biosciences program. I appreciate the efforts rendered by the Program Team, Assessment Team and QEC staff for the preparation and completion of the Self-Assessment Report of MS-Biosciences program.

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: As the MS-Biosciences program is new, the assessment of the program has highlighted areas for improvement. The implementation of the Assessment Team's recommendation will improve the quality of the program and would enhance the overall educational experience of the students. The IR/QEC staff is confident that the implementation of the corrective actions will strengthen the market standing of the program, enhance students' overall educational experience and would help them in exploring new opportunities in corporate sector. The process reached its destination with the support of the Head of the Department, efforts of the Program and Assessment Teams, and commitment of the IR/QEC staff.

Name and Signature:

Ms. Faryal Shahabuddin

Ms. Mahwash Imran

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY

SZABIST

SELF-ASSESSMENT REPORT

MS- 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): MS Biosciences

Team Leader: DR ZULFIQAR NAQVI

Name: DR ZULFIQAR NAQVI

Position: Assistant Professor

Institution: SZABIST

Contact No: (Office) Ext 151 90 Campus

Mobile No: 0334 347 7860

Email Address: zulfiqar.naqvi@szabist.edu.pk

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.

Zulfiqar — 21-03-2016

(Signature of PT Member) 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): MS- BIOSCIENCES / ~~M. MUJTABA BABAR~~

Team Leader: Dr. ZULFIQAR NAQVI

Name: M. MUJTABA BABAR.

Position: PERMANENT FACULTY (LECTURER)

Institution: SZABIST (KHI).

Contact No: (Office) 021-35831535 / 35824461-2 ext-125.

Mobile No: 0333-2407944

Email Address: mujtabababar@SZABIST.EDU.PK

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)

18/3/2016.
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): ~~Shahab Mehmood~~ / MS-Biosciences

Team Leader: Dr. Zulfiqar Naqvi

Name: Shahab Mehmood

Position: Assitant Professor

Institution: SZABIST

Contact No: (Office) 35831535 Ext. 206

Mobile No: 0300-9230866

Email Address: Shahab.mehmood@szabist.edu.pk

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.

Shahab Mehmood — 18/03/16

(Signature of PT Member) 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

MS- Biosciences

Assessment Team Registration Forms

SHAHEED ZULFIKAR ALI BHUTTO
INSTITUTE OF SCIENCE AND TECHNOLOGY
Karachi Campus

Registration Form

Assessment Team

Assessment Team of (Name of Department / Faculty): __MS-Biosciences_____

Team Leader: _____

Name: __Dr. Hammad Afzal Kayani_ Position: __Assistant Professor___

Institution: __SZABIST_____ Contact No: (Office) ___EXT: 151_____

Mobile No: _03013365167_____ Email Address: hammad.afzal@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.

_____ _____ ___3rd June, 2016_____

(Signature of AT Member) Date

Approved By: _____

(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): MS. Bio-Sciences

Team Leader: Dr. Hammad Afzal

Name: Ayesha Latif Shaikh Position: Assit. Professor

Institution: SZABIST, Karachi Contact No: (Office) 35824461-62.

Mobile No: 0333-2391889. Email Address: ayesha.latif@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.

Ayesha 3/6/2016.

(Signature of AT Member) Date

Approved By: Jawad

(Head of the QEC)