BIIT

SELF ASSESSMENT REPORT

Bachelor of Science in Computer Science

136 Credit Hours

(2018-2020)

Barani Institute of Information Technology Rawalpindi

Feb 22, 2021

Table of Contents

Criterion 1: Program Mission, Objectives and Outcomes

Standard 1-1: The program must have documented measurable objectives that support Faculty / College and institution mission statements.
Standard 1-2: The program must have documented outcomes for graduating students. It must be demonstrated that the outcomes support the program objectives and that graduating students are capable of performing these outcomes.
Standard 1-3: The results of program's assessment and the extent to which they are used to improve the program must be documented.
Standard 1-4: The department must assess its overall performance periodically using quantifiable measures

Standard 1-1: Program Measurable Objectives

The Barani Institute of Information Technology (BIIT) has been established with the objectives of producing highly qualified, scientific and technical personnel to meet the country's requirements of IT human resource. BIIT was established at the University, in 1998, after a long and deliberate consideration of the growing needs of Software development and the initiative launched by Government of Pakistan, known as Public Private Partnership. The Institute was originally established as a joint venture between the PMAS Arid Agriculture University and private sector. However, on recommendation of HEC and Govt of Pakistan, in 2016 the joint venture was transferred to an affiliated institute status. The institute operates on self-financed scheme and is concentrating on the following academic areas: Computer Sciences and Information Technology. BIIT takes pride in being the first institute in Pakistan to launch the four year Computer Science and Information Technology degree programs, which are recognized nationally and internationally

Vision

Barani Institute of Information Technology's vision is to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

Mission

To obtain excellence with fairness and quality teaching by producing computer scientists in IT sector well-equipped with practical knowledge, innovation, adaptability and research along with conformity to the Islamic values, morality, ethics and global standards

a. Program Mission Statements

Mission Statement of BS in Computer Science Program

The aim of the BS Computer Science program is to provide quality technology education to the students seeking to enhance their knowledge and research skills of the discipline through class room teaching, laboratory sessions, research workshops, seminars, projects and focusing on producing leading technology graduates who are able to innovate and perform a significant role in the continuing transformation of the local and global society.

b. Program Objectives

Upon completion of their degree, BS Computer Science (CS), a 136-credit hour program, graduates will:

1. Have a well-rounded education and a solid basis of knowledge in advanced technical and computer science courses.

2. Have a sound understanding of the Computer Science practical work and equip students to face computer industry challenges.

3. Have a varied and balanced educational experience with an appropriate mix of theoretical knowledge and practical skills that will enable them to enter into and advance in the profession of

computer science by adapting to emerging technologies and the ever changing needs of industry or the cutting edge computer science technologies.

4. Conduct themselves as responsible, ethical professionals and responsible citizens, who are aware of ethical issues and societal needs and can perform service to society and the computer science profession through participation in professional societies, government, civic organizations, and humanitarian endeavors.

c. Program Outcomes (BS Computer Science)

To attain the educational objectives of the BSCS program, the department intends to produce the following measurable outcomes at the time of graduation. Graduates of the BSCS program will have:

1. The ability to utilize the knowledge acquired to be used in solving computing problems.

2. The ability to think critically, perform scientific analysis and develop solutions for typical computing problems.

3. Proficiency in analysis of algorithms, operating systems, theory of computation and computer architecture.

4. In depth knowledge in advanced and evolving areas in computing and in research.

5. The ability to acquire knowledge and skills independently.

6. The ability to communicate effectively using technical research writing and presentations.

7. Have an understanding of professional, ethical and social responsibilities and to work within teams and in multi-disciplinary environments.

8. Recognize the need for, and an ability to engage in, continuing professional development.

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

Objective	Alignment with program, and institution mission statement
Have a well-rounded education and a solid basis of knowledge in advanced technical and computer science courses	To provide quality advanced technology education to the students
Have a sound understanding of the Computer Science practical work and equip students to face computer industry challenges.	Practical skills of the discipline through class room teaching, laboratory sessions, workshops, seminars and projects
Have a varied and balanced educational theoretical knowledge and practical skills that will enable them to enter into and advance in the profession of computer science by adapting to emerging technologies and the ever changing needs of industry or the cutting edge computer science technologies.	Focusing on producing leading technology graduates who are able to innovate and perform a significant role in the continuing transformation of the local and global society. Providing hi-tech scientific and technological assistance to the Pakistan industry
Conduct themselves as responsible, ethical professionals and responsible citizens, who are aware of ethical issues and societal needs and can perform service to society and the computer science profession through participation in professional societies, government, civic organizations, and humanitarian endeavors.	Perform a significant role in the continuing transformation of the local and global society. Providing a sound socio-economic and scientific base and infrastructure to Pakistan

Table 1: Mapping of program objective with the vision and mission of institute

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 institute that prepares IT educated, technologically proficient and highly productive citizens.

1. An Integrated Academic Experience: An integrated academic environment fosters connections among disciplines, between faculty and students, and with campus and community. Such an integrated experience is rich in opportunities for

exploration, discovery and learning. It provides diverse perspectives, and it prepares students to be thoughtful competent citizens able to contribute to the common good. We achieve this goal through ongoing collaborative efforts that involve administration, faculty, students and staff.

2. Diverse Curriculum: Keeping in mind that a well-designed academic curriculum needs not only to be comprehensive and effective but also flexible. Therefore, as new technology emerges and demands of the field evolve, the curriculum is revised without losing its commitment to quality. For this purpose, a wide range of electives subjects are offered to ensure that the curriculum is responsive to the ever changing needs of computer science 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. BIIT engage students by providing training for students in research methodology and responsible research conduct, and by involving graduate students in multi-disciplinary software projects carried out at BIIT, such as Learning from Quran, Telemedicine, Electronic Health Records, and Security Software etc.

4. Professional Career building: BIIT Placement Office (BPO) 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 BPO to conduct their employment tests, interviews and other on-campus recruitment activities to directly induct BIIT graduates into their organizations. Additionally, at least once a year, a 'Job Fair' is held at the institute campus where many leading companies are invited to explain their recruitment procedures and the scenario about present and future vacancies. A graduate directory is published, once a year. It is a compendium which gives CVs of all students who have graduated during the year and it is distributed free of charge to all leading companies, where it serves as a useful reference book to find appropriate candidates for present and future vacancies.

5. Co-curricular leaning: In order to promote learning that is active, self-motivated, exploratory and attentive, a wide range of learning opportunities, both curricular and co-curricular are used. It includes student research, 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

Objective	How Measured	When Measured	Improvement /Issues	Improvements Made
Have a well-rounded education and a solid basis of knowledge in advanced technical and computer science courses	Course Outline, midterm examination, final examination, assignments and reports	Every Semester	Curriculum needs to be updated as per Latest HEC Education policy	Board of studies reviews courses to bring in new changes.
Have a varied and balanced educational experience with an appropriate mix of theoretical knowledge and practical skills that will enable them to enter into and advance in the profession of computer science by adapting to emerging technologies and the ever changing needs of industry or the cutting edge computer science technologies.	Independent studies, research projects, thesis	Every Semester	Very few students interested in research	Encourage more students to pursue thesis and doctoral studies
Have a varied and balanced educational experience with an appropriate mix of theoretical knowledge and practical skills that will enable them to enter into profession of computer science by adapting to emerging technologies and the ever changing needs of industry or the cutting edge computer science technologies	Course exams, Practical Reports, Projects, Assignments,	Every Semester	Need to bring in guest speakers from industry	Guest speakers are invited to a class session
Conduct themselves as responsible, ethical professionals and responsible citizens, who are aware of ethical issues and societal needs and can perform service to society and the computer science profession through participation in professional societies, government, civic organizations, and humanitarian endeavors.	Group assignments, final reports and presentation, surveys, liaisons with different organizations	Every Semester	Need to improve	BPO, time management, motivational speakers seminars

Table 2: Assessment of Program Objectives

Standard 1-2

a. Program Outcomes and Objectives Matrix (BS Computer Science)

In order to assure that graduates of the BSCS 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	4	5	6	7	8
1	X	X	X	X				
2	X	X	X	X		X		X
3	X		X	X	X			X
4					X	X	X	X

Table 3: Mapping of Program Objectives and Program Outcomes

The best instrument to measure the program objectives and program outcomes is the employers' survey. BIIT through its BPO performs survey of the employers of IT industry during every year. Given below are the results of the online survey conducted during this semester while universities and most of the organizations were locked down due to COVID-19

b. Employer Survey

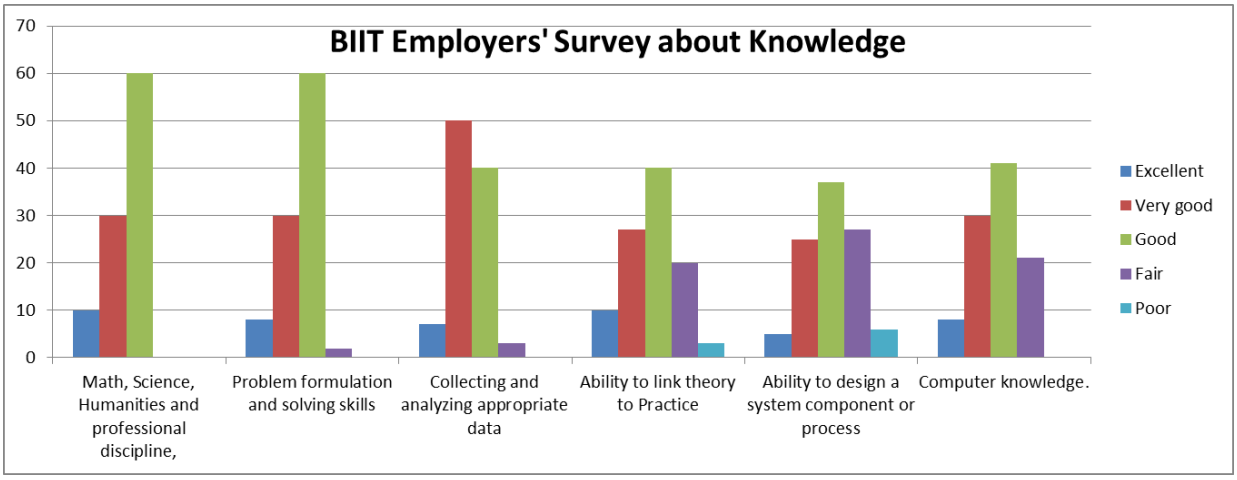

Figure 1: Employer Survey about Knowledge

As shown in Fig 1, the employers rate the knowledge of graduates of BIIT mostly in good category. BIIT graduates are good in Math, Science and other basic subjects. Similarly, survey results are encouraging about the problem formulation and problem solving skills.

BIIT graduates are very good in collecting and analyzing data. They can link theory with the practical applications with the foundation of good computer skills.

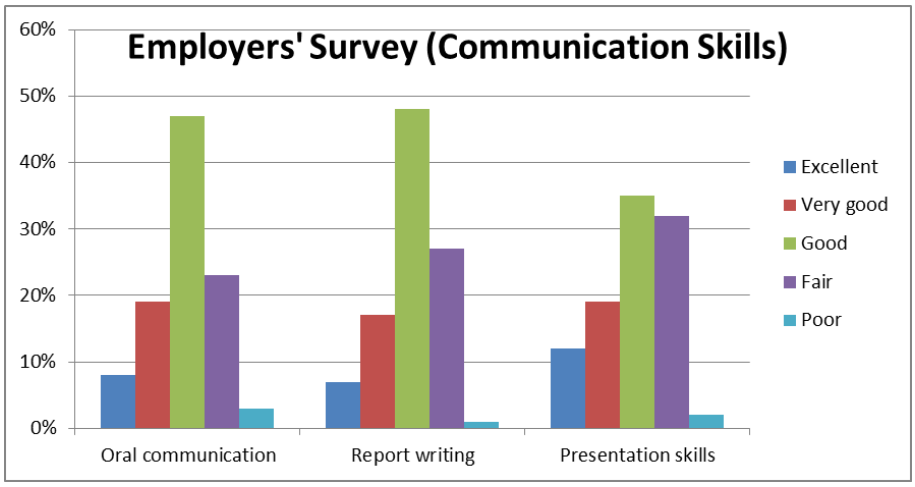

Figure 2: Employer Survey about Communication Skills

Employers' survey about the communication skills of BIIT graduates, shown in Fig 2 given above, shows that the BIIT students have good oral and written communication. However, their presentation skill is not as good as first two. There is opportunity for improvement in the presentation skills of the students. The methodology of teaching the communication skill course will be revised to overcome this weakness.

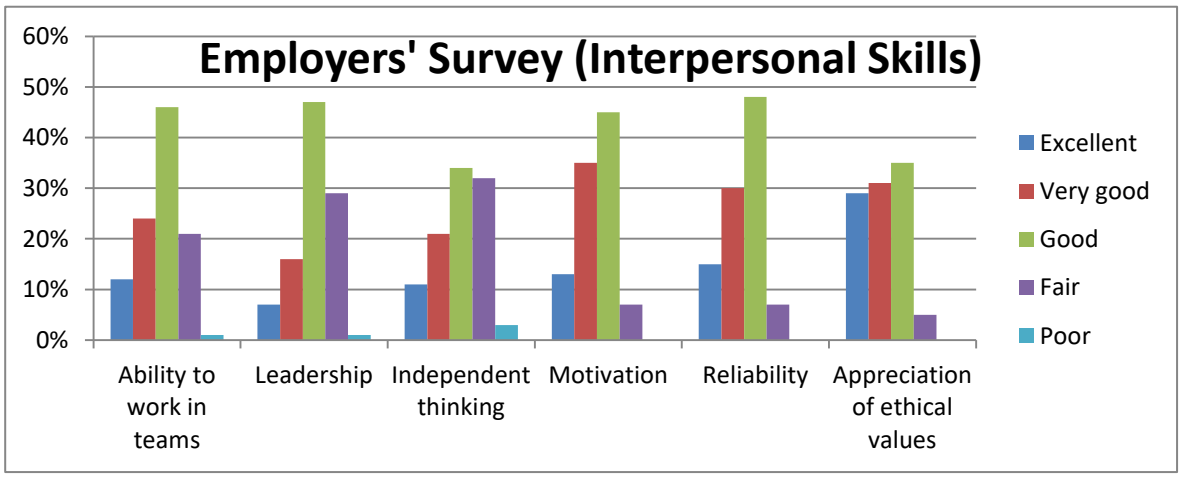

Figure 3: Employer Survey about Interpersonal Skills

Survey results about interpersonal skills of BIIT students are good in all the category of questions asked. They have good ability to work as team, with good motivation and leadership qualities. As per survey results shown above BIIT graduates are very reliable and have excellent ethical conduct.

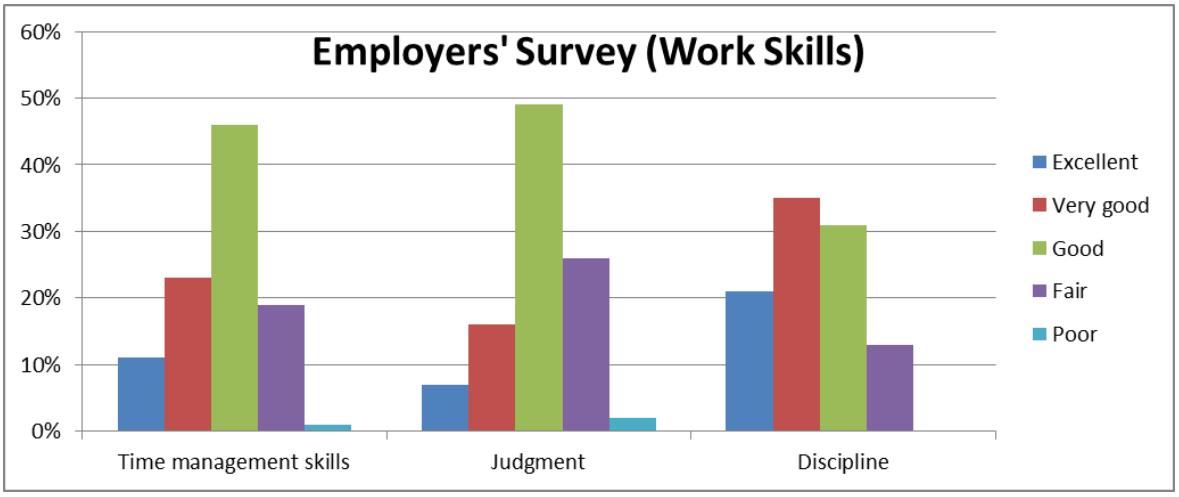

Figure 4: Employer Survey about Work Skills

As shown in Fig 4, given above employers' survey about work skills of BIIT graduates is very encouraging. It shows that they have good team management skills and have good judgment. Discipline of the on job BIIT student is very good.

Another important instrument to measure the program objectives and program outcomes is alumni survey. BIIT through its BPO is well connected with the alumni and performs the survey of batches graduated two or three semesters earlier. Given below are the results of the alumni survey (as per format of QEC department of HEC) conducted online during this semester which was totally conducted online due to COVID-19.

c. Alumni Survey

In order to get the feedback of Alumni, a survey was conducted about their knowledge, communication skills, leadership, management and work skills. Given below are the results of the survey along with the description of explanation about the results.

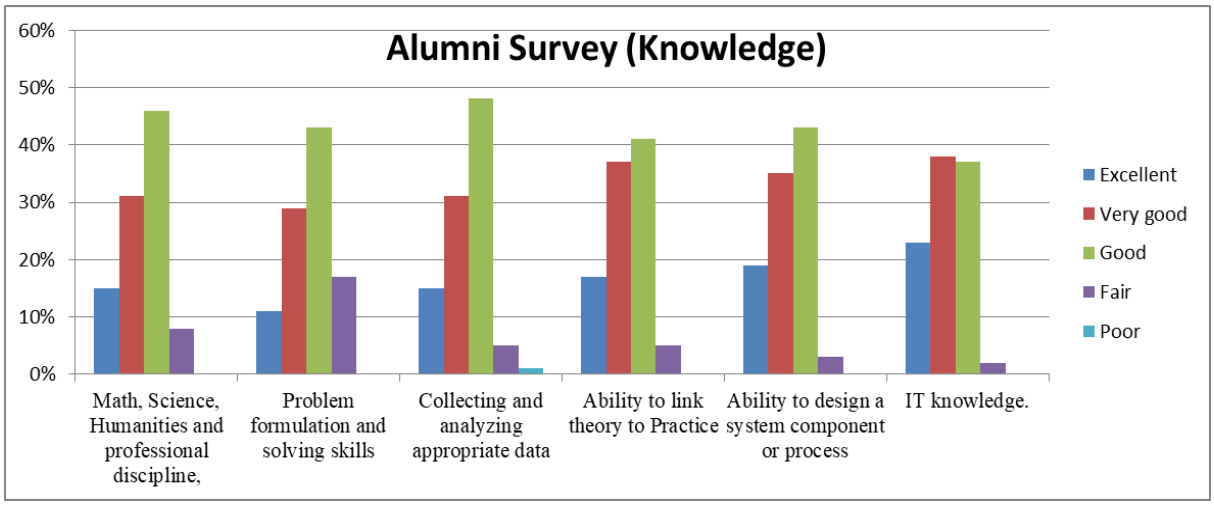

Figure 5: Alumni Survey about Knowledge

Shown in Fig 5 is the perception of alumni about their knowledge, which seems to be mostly in good category. Alumni feels confident (i.e. mostly in good, very good and excellent) about their knowledge of basic sciences, problem formulation and analyzing, ability to apply their knowledge on practical problems, and the ability to design system components or processes. Most of them think that they have very good overall IT knowledge.

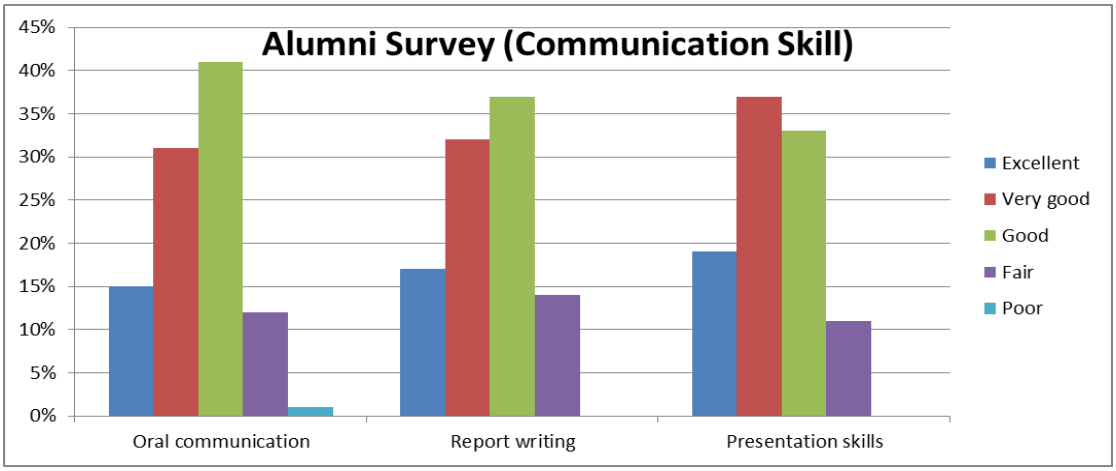

Figure 6: Alumni Survey about Communication Skill

As shown in Fig 6 given above, categorization of alumni about their communication skills is also very good. It has improved as compared to the results of previous years. However, in employers' survey we have observed that the presentation skill of alumni needs improvement as compared to the oral and written abilities which are already at good level.

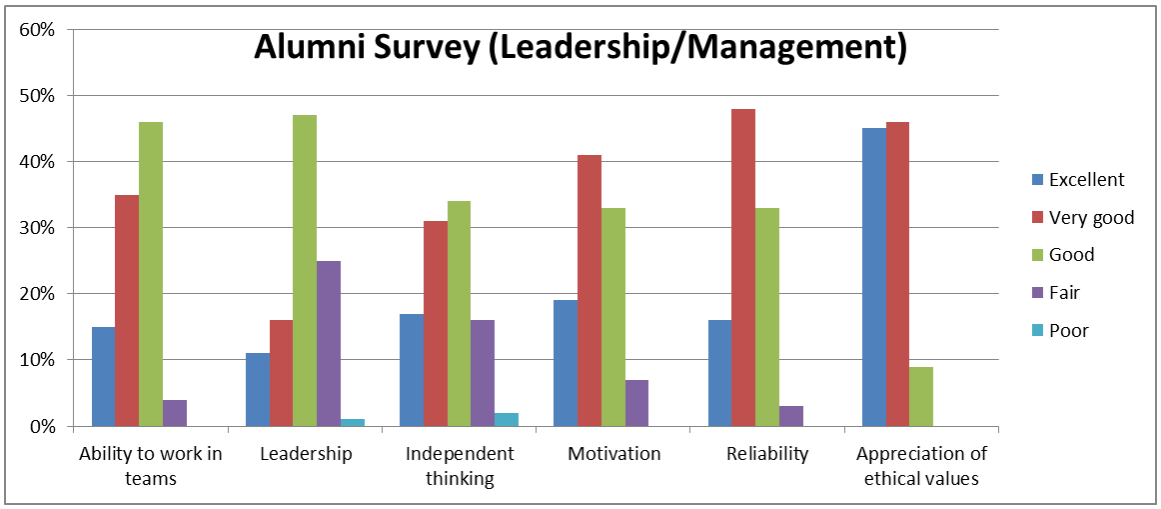

Figure 7: Alumni Survey about Leadership and Management

Alumni survey depicts excellent and very good results in the category of appreciation of ethical values. Reliability of the alumni is mostly very good. Moreover, they have good ability to work in teams, leadership skills and independent thinking.

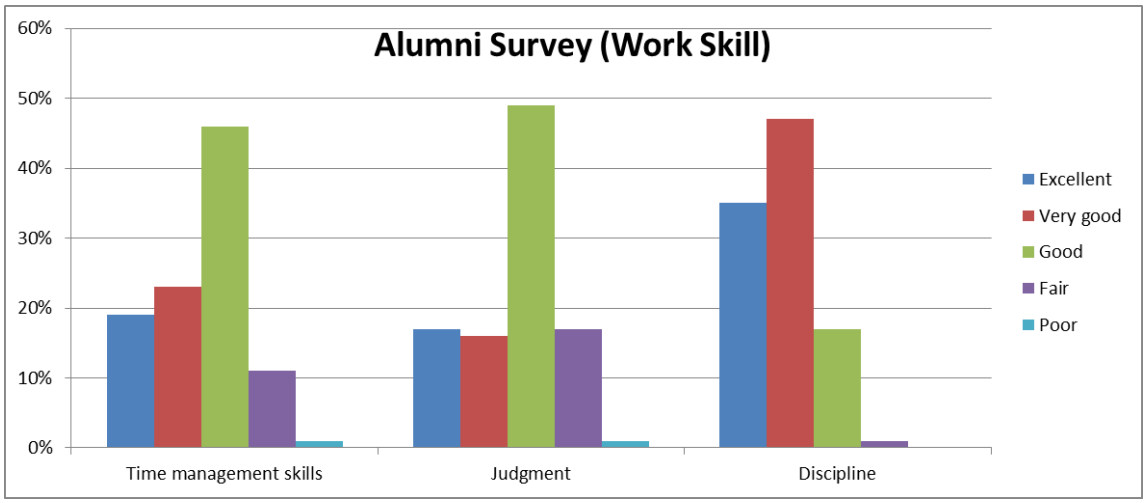

Figure 8: Alumni Survey about Work Skills

Results of the alumni survey regarding work skills of BSCS alumni are shown in Fig 8. They are excellent and very good in the category of discipline, while good in the categories of judgment and team management skills. Results are better than the surveys of previous years showing continuous improvement.

Standard 1-3: Assessment Results and Improvement Plans

a. Describe the action taken based on the periodic assessments

- Board of studies meetings are held to evaluate and upgrade the course contents
- Students counseling is done to encourage more students to pursue doctoral studies
- Students are required to attend different workshops and thesis/ dissertation defense
- Course evaluations are conducted.

b. Describe major program improvement plans based on recent assessments

Program Improvement Plan based on Recent Assessment

- Integrate research project with the areas of specialization and include industry projects as well along with theoretical and academic research
- Introduce new courses to cater the market needs
- Changing course delivery from traditional classroom teaching to case-based teaching methodology
- Organize National and International Research Conference on more frequent basis

c. Strengths and weaknesses of the program

Strengths of the program:

- Faculty from diverse industry/corporate backgrounds
- Seminars and workshops conducted on a regular basis
- Research included as part of curriculum

Weaknesses of the program:

- Need to develop practical lab-related skills
- Require stronger industry collaboration
- Training opportunities offered to faculty

d. Significant future plans for the program

- Introduce new specialization areas
- Changing course delivery from traditional classroom teaching to case-based teaching methodology

Standard 1-4: Overall Performance Using Quantifiable Measures

a. Indicate percentage of successful students during study years showing their average Grade Point Average per semester, time required to complete the program, and dropout ratio of students

The maximum time to complete the BSCS program is 6 years.

Average GPAs

The following table consists of average GPAs of the BS Computer Science program:

Semester	Average GPA
Fall 2017	3.01
Spring 2018	2.92
Fall 2018	2.64
Spring 2019	2.81
Fall 2019	2.87
Spring 2020	3.52

Dropout Ratio

Particulars	2016	2017	2018	2019	2020
Enrolled students	1665	1902	2094	2205	2143
Dropouts	17	103	75	101	63
Dropout (percentage)	1%	5%	4%	5%	3%

b. Percentage of Student Evaluation/Assessment Results for all the courses and faculty

Faculty & Courses Rating					
Semester	**Excellent**	**Very Good**	**Good**	**Satisfactory**	**Not Satisfactory**
Fall 2017	40%	40%	10%	5%	5%
Spring 2018	70%	20%	10%	0%	0%
Fall 2018	36%	42%	12%	5%	5%
Spring 2019	38%	20%	10%	0%	0%
Fall 2019	40%	40%	10%	5%	5%
Spring 2020	70%	20%	10%	0%	0%

May be due to online courses the rating of faculty and courses has improved.

c. Faculty and student surveys

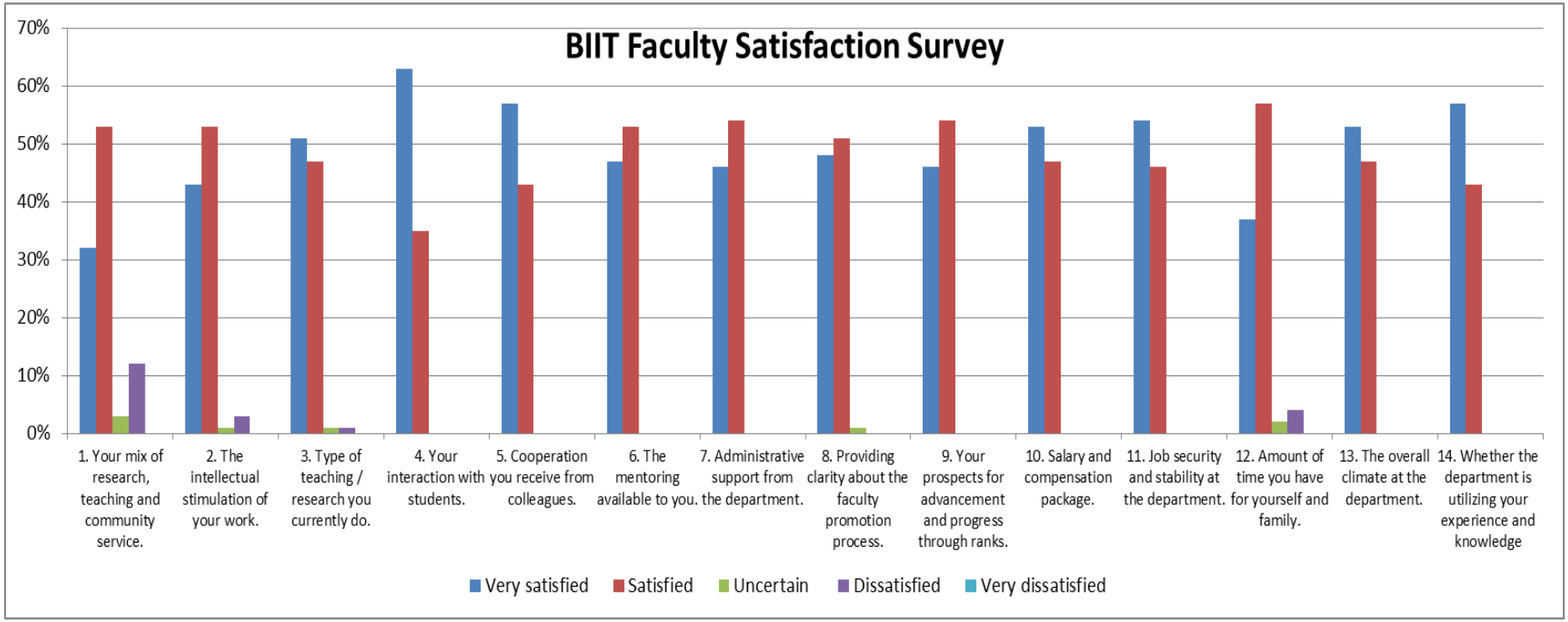

Figure 9: Faculty Satisfaction Survey

As shown in Fig 9 given above survey results show that the satisfaction level of BIIT faculty is high from all aspects of QEC Proforma. Faculty has rated excellent and good in the categories of utilization of their experience and knowledge, job security, overall climate of the department, salary and compensation packages, prospects for advancement and progress in ranks, administrative support, mentoring available, cooperation from colleagues and the interaction of faculty with the students. Faculty has shown minor dissatisfaction about the amount of time they have for their family, type of teaching / research they do and the intellectual stimulation of their work. Dissatisfaction level is relatively high about the research activities being performed at the department. So the department will take corrective measures about this category.

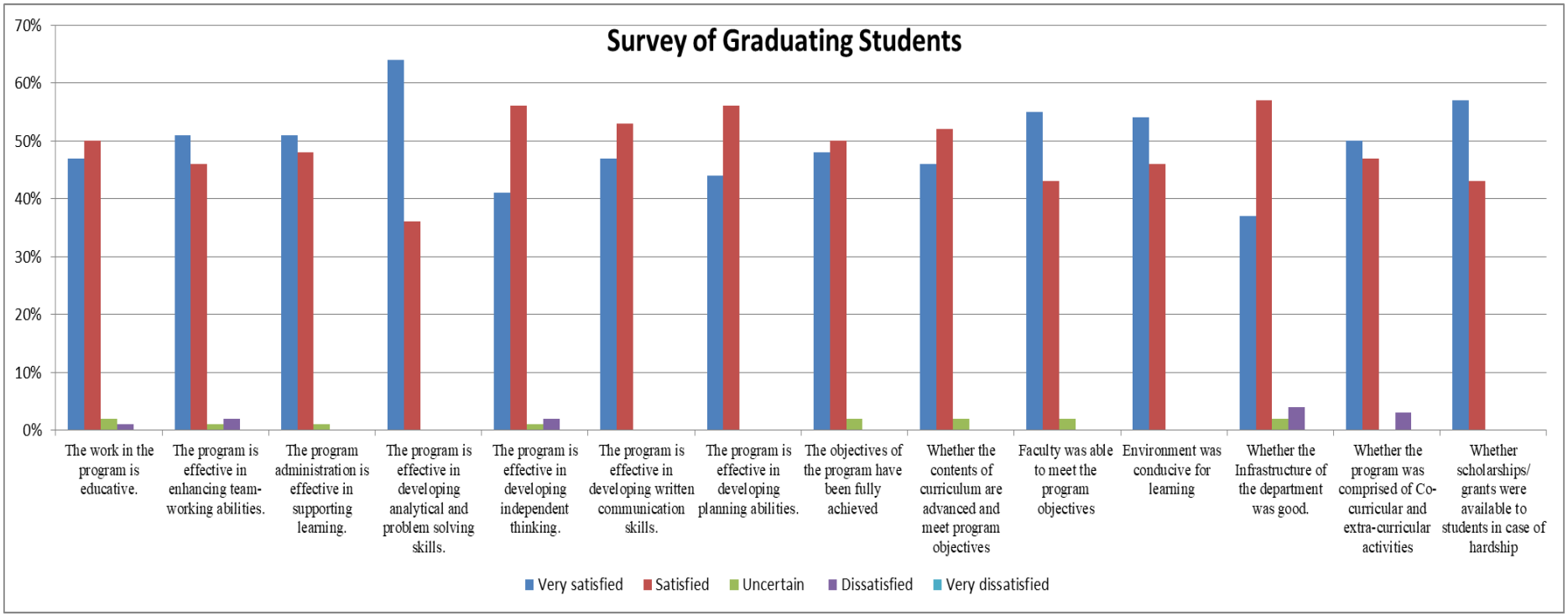

Figure 10: Survey of Graduating Students

The results of the survey of the students conducted at the time of graduation are shown in Fig 10 given above. The survey of graduating students of BIIT also shows good level of satisfaction. BIIT graduates of BSCS program are fully satisfied in the categories of scholarship provided to them. As, BIIT gives merit based and need based scholarships to its students of BSCS program. Similarly, they are also fully satisfied with the enviroment, objectives of the program, effectiveness of the program for developing analytical skills and administration of the program.

Criterion 2: Curriculum Design and Organization

Standard 2-1: The curriculum must be consistent and supports the program's documented objectives.
Standard 2-2: Theoretical background, problems analysis and solution design must be stressed within the program's core material.
Standard 2-3: The curriculum must satisfy the core requirements for the program, as specified by the respective accreditation body. Examples of such requirements are given in Table A.1, Appendix A.
Standard 2-4: The curriculum must satisfy the major requirements for the program as specified by HEC, the respective accreditation body / councils. Examples of such requirements are given in Table A.1, Appendix A.
Standard 2-5: The curriculum must satisfy general education, arts, and professional and other discipline requirements for the program, as specified by the respective accreditation body / council.
Standard 2-6: Information technology component of the curriculum must be integrated throughout the program.
Standard 2-7: Oral and written communication skills of the student must be developed and applied in the program.

Standard 2-1: Courses vs. Objectives

a. Title of Degree: Bachelor of Science in Computer Science

b. Definition of credit hours: It is a 136 credit hours program spanned over 18 core courses, 7 electives and 1 project of 6 credit hours. While the courses belonging to the categories of supporting, math & science foundation, and general education are as per curriculum of HEC.

c. Curriculum Plan

The BS(CS) students are required to take the following 43 courses to earn 136 credit hours. These courses are designed to meet the general HEC requirements as proposed by National Curriculum Revision Committee.

Course Group	Credit hours
Computing – Core	39
General Education	19
University Electives	12
Mathematics & Science Foundation	12
Common Courses	**82**
Domain Computer Science (CS)	
Domain CS Core	24
Domain CS Supporting	09
Domain CS Electives	21
Domain CS Courses	**54**
TOTAL	**136**

#	Codes	Pre-Reqs	Course Title	Credit hours
Computing Core (39/136) 11 Courses				
1	CS323		Programming Fundamentals	4 (3-3)
2	CS335		Discrete Structures	3 (3-0)
3	CS400		Database Systems	4 (3-3)
4	CS423	CS323	Object Oriented Programming	4 (3-3)
5	CS443	CS323	Data Structures and Algorithms	4 (3-3)
6	CS453		Software Engineering	3 (3-0)
7	CS497		Information Security	3 (3-0)
8	CS577		Computer Networks	4 (3-3)
9	CS583		Operating System	4 (3-3)
10	CS698		Final Year Project - I	2 (0-6)
11	CS699	CS698	Final Year Project - II	4 (0-12)
CS Core (24/136) 7 Courses				
12	CS430		Digital Logic Design	4 (3-3)
13	CS530	CS430	Computer Organization & Assembly Language	4 (3-3)
14	CS536	CS335	Theory of Automata & Formal Languages	3 (3-0)
15	CS542	CS443	Analysis of Algorithms	3 (3-0)
16	CS632		Artificial Intelligence	4 (3-3)

17	CS636	CS536	Compiler Construction	3 (2-3)
18	CS687		Parallel & Distributed Computing	3 (2-3)
CS Electives (21/136) 7 Courses				
19	CS432	CS423	Modern Programming Languages	3 (2-3)
20	CS566		Web Technologies	3 (2-3)
21	CS575	CS323	Computer Graphics	3 (2-3)
22	CS601	CS400	Database Administration and Management	4 (3-3)
23	CS666	CS566	Web Engineering	3 (2-3)
24	CS692	CS423	Visual Programming	3 (2-3)
25	CS693	CS432	Mobile Application Development	3 (2-3)
.	CS597		Cyber Security	3 (3-0)
.	CS685		Human Computer Interaction	3 (2-3)
.	CS532		Computer Architecture	3 (3-0)
.	CS682		System Programming	3 (2-3)
.	CS695	CS423	Theory of Programming Languages	3 (2-3)
			CS Supporting Courses (9/136) 3 Courses	
26	MTH315	MTH310	Multivariable Calculus	3 (3-0)
27	MTH415	MTH315	Differential Equations	3 (3-0)
28	CS572	MTH310	Numerical Analysis	3 (2-3)
Mathematics & Science Foundation Courses (12/136) 4 Courses				
29	MTH310		Calculus and Analytic Geometry	3 (3-0)
30	MTH435		Linear Algebra	3 (3-0)
31	ELE401		Basic Electronics	3 (2-3)
32	STT500		Statistics and Probability	3 (3-0)
University Electives (12/136) 4 Courses				
33	MGT322		Financial Accounting	3 (3-0)
34	MGT351		Introduction to Marketing	3 (3-0)
35	MGT411		Introduction to Management	3 (3-0)
36	MGT515		Introduction to Human Resource Management	3 (3-0)
.	MGT512		Introduction to Organizational Behavior	3 (3-0)
.	MGT525	MGT322	Introduction to Financial Management	3 (3-0)
.	SSH304		Personal Grooming and Development	2 (2-0)
.	SSH305		Social Service	1 (1-0)
General Education (19/136) 7 Courses				
37	CS300		Introduction to Information & Communication Technologies	3 (2-3)
38	ENG305		English Comprehension	3 (3-0)
39	ENG315		Technical and Business Writing	3 (3-0)
40	ENG325		Communication & Presentation Skills	3 (3-0)
41	IS302		Islamic Studies	2 (2-0)
42	SSH302		Pakistan Studies	2 (2-0)
43	SSH307		Professional Practices	3 (3-0)

d. Curriculum Course Requirements Semester-Wise

Study Plan for BS (Computer Science)
4-Year Program (8 Regular Semesters of 18 weeks each)

Semester 1

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-300		Introduction to Information & Communication Technologies	3(2-2)
CS-323		Programming Fundamentals	4(3-2)
ENG-305		English Comprehension	3(3-0)
MTH-310		Calculus & Analytical Geometry	3(3-0)
ELE-401		Basic Electronics	3(3-0)
IS-302		Islamic Studies/ Ethics	2(2-0)

Semester 2

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-423	CS-323	Object Oriented Programming	4(3-2)
ENG-325		Communication & Presentation Skills	3(3-0)
CS-430		Digital Logic Design	4(3-2)
STT-500		Statistics & Probability	3(3-0)
		University Elective -1	
		CS Supporting 1	

Semester 3

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-443	CS-323	Data Structures & Algorithms	4(3-2)
CS-335		Discrete Structures	3(3-0)
SSH-307		Professional Practices	3(3-0)
CS-530	CS-430	Computer Organization & Assembly Language	4(3-2)
		University Elective -2	
		CS Supporting 2	

Semester 4

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-400		Database Systems	4(3-2)
MTH-435		Linear Algebra	3(3-0)
CS-542	CS-443	Analysis of Algorithms	3(3-0)
CS-536	CS-335	Theory of Automata & Formal Languages	3(3-0)
CS-583		Operating Systems	4(3-2)
		CS-Elective -1	

Semester 5

Course Code	Pre-Requisite	Course Title	Credit Hours
ENG-315		Technical & Business Writing	3(3-0)
CS-453		Software Engineering	3(3-0)
CS-636	CS-536	Compiler Construction	3(2-2)
		CS-Elective -2	
		University Elective -3	
		CS Supporting 3	

Semester 6

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-577		Computer Networks	4(3-2)
CS-632		Artificial Intelligence	4(3-2)
SSH-302		Pakistan Studies	2(2-0)
		CS Elective 3	
		CS Elective 4	
		University Elective -4	

Semester 7

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-698		Final Year Project-I	2(0-04)
CS-687		Parallel & Distributed Computing	3(2-2)
		CS Elective 5	
		CS Elective 6	
		CS Elective 7	

Semester 8

Course Code	Pre-Requisite	Course Title	Credit Hours
CS-497		Information Security	3(3-0)
CS-699	CS-698	Final Year Project-II	4(0-08)

f. Courses versus Outcomes

Courses	Program Outcomes							
	1	2	3	4	5	6	7	8
CS323, CS335, CS400 CS423, CS443	X	X	X					
CS453, CS497, CS577, CS583	X	X	X					
CS698, CS699, CS430, CS530, CS536, CS542, CS632	X	X	X	X	X	X	X	
CS636, CS687, CS432, CS566, CS575, CS601				X	X	X	X	X
MTH315, MTH415, CS572, MTH310, MTH435, ELE401	X	X	X					
STT500, MGT322, MGT351, MGT411, MGT515	X	X	X					
CS300,ENG305, ENG315, ENG325				X	X	X	X	X
CS666, CS692,CS693				X	X	X	X	X
IS302, SSH302, SSH307				X	X		X	X

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.

Element	Courses
Theoretical Background	CS323, CS335, CS400, CS423,CS443, MTH315, MTH415, CS572, MTH310, MTH435, ELE401, STT500, MGT322, MGT351, MGT411,MGT515, CS300,ENG305, ENG315, ENG325, IS302, SSH302, SSH307
Problem analysis and solution	CS453, CS497, CS577, CS583, CS698, CS699, CS430, CS530, CS536, CS542, CS632
Practical Applications	CS636, CS687, CS432, CS566, CS575, CS601 CS666, CS692,CS693

Standard 2-3: Mathematics and Basic Sciences Requirement

Courses are part of the curriculum as per HEC requirements.

Standard 2-4: Major Requirements by Accreditation Body

Major requirements of HEC as specified in "Curriculum of Computer Science Revised in 2017. This document is available at HEC website.

Course Group	Credit hours
Computing – Core	39
General Education	19
University Electives	12
Mathematics & Science Foundation	12
Common Courses	**82**
Domain Computer Science (CS)	
Domain CS Core	24
Domain CS Supporting	09
Domain CS Electives	21
Domain CS Courses	**54**
TOTAL	**136**

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

Courses are part of the curriculum as per HEC requirements.

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

Information Technology contents are part of the all the courses as per HEC requirements.

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

To enhance the communication skills of the students, courses like CS300,ENG305, ENG315, ENG325, are part of the curriculum as per HEC requirements.

Criterion 3: Laboratories and Computing Facilities

Standard 3-1: Laboratory manuals/documentation/instructions for experiments must be available and readily accessible to faculty and students.
Standard 3-2: There must be adequate support personnel for instruction and maintaining the laboratories.
Standard 3-3: The University computing infrastructure and facilities must be adequate to support program's objectives.

Standard 3-1: Lab Manuals / Documentation / Instructions

BIIT is equipped with state of the art computing facilities with high bandwidth connectivity to the internet. Moreover, Wi-Fi is enabled in 90 and 100 Campus; as a result, all BS Computer Science students with Wi-Fi enabled devices can access all network resources wirelessly.

At the time of registration, a separate user ID and password is assigned to all students to access the BIIT LMS SYSTEM.

Computer Labs are open to all students for computing and printing facilities from 9:00 AM to 10:00 PM from Monday to Friday. Color and Laser printing is available at nominal cost.

To ensure the integrity of the network, students are not allowed to install their own software programs on BIIT computers. Should additional software be required to under-take a course-related assignment, students first seek written approval of the concerned faculty and contact the Manager Systems.

To handle sudden and abrupt power interruptions, a five minute power back up is available for all computers with UPS facility.

A ***Lab Schedule*** is maintained to avoid any confusion and to allow all student groups to get adequate time at work stations. During ***open hours*** the use of the labs is based on first-come- first-serve basis. Labs 1 and 2 have 50 (25 each) workstations. Labs 3 and 4 have 50 (25 each) workstations. Lab 5 has 25 work stations and Lab 6 has 25 workstations. Lab 7 has 25 workstations. Project lab is primarily used for research purposes with a 10 workstations and space for laptops.

Lab Title	Lab 1 and 2
Location	Main BIIT floor
Objectives	• For holding Lab sessions and course related sessions or exams for classes with 50 students. • For Internet usage • For Printing of reports, assignments • To access Digital Library link, BIIT e-library
Adequacy for instruction	Adequate for 50 students at a time. 50 desktops systems, and two White boards available. Overhead projectors are permanently available in these labs.
BS Computer Science Courses taught	All core computing related courses are taught in these labs. Moreover, these labs are also used for elective course like Web Programming, paper writing workshops etc.

Software available	Windows 7 Professional operating system enabled workstations. Microsoft Office 2010 (Word, Excel, PowerPoint, BS Visio, BS Project), BS Visual Studio, Oracle 10g and Developer/6i, Turbo C++, SPSS 14, Client software for OS/400 and other major utilities installed.
Major equipment	50 Desktop PCs, Colored Scanner, HP Network Laser Color Printer and HP LaserJet printing facilities. Switch Full Deluxe (48 Ports). All workstations are connected through Giga Speed 100 Base-T Fast Switches.
Safety regulations*	Available

Lab Title	Lab 3 and 4
Location	Main BIIT floor
Objectives	• For holding Lab sessions and course related sessions or exams for classes up to 50 students. • For Internet usage
Adequacy for instruction	Adequate for 50 students at a time. 50 desktops systems, and two White Boards available. Projector available from Academics office on request by course instructor.
BS Computer Science Courses taught	All courses Network Security, Switching and Routing, SPSS Professional tutorial etc.
Software available	Windows 7 Professional operating system enabled workstations. GNS3, ns2, Microsoft Office 2010 (Word, Excel, PowerPoint, MS Visio, MS Project),SPSS 14,MS Studio.Net, Platform, Oracle 10g and Developer/6i, Turbo C++, Visual tools, Macromedia Flash, Adobe Acrobat reader, MSSQL Client and other utilities installed.
Major equipment	50 Desktop PCs, Switch Full Deluxe (48 Ports),Workstations connected through CISCO Giga Speed 100 Base-T Fast Switch
Safety regulations*	Available and communicated

Lab Title	Lab 5 and 6
Location	Main BIIT floor
Objectives	• For holding Lab sessions and course related sessions or exams for classes with more than 40 students. • For Internet usage
Adequacy for instruction	Adequate for 50 students at a time. 50 desktops systems, and two White Boards available. Projector available from Academics office on request by course instructor.
BS Computer Science Courses taught	Advanced databases and warehousing, Data Mining, SPSS Professional tutorial in Research Methodology course etc.
Software available	Windows 7 Professional operating system enabled workstations. Microsoft Office 2010 (Word, Excel, PowerPoint, MS Visio, MS Project), SPSS 14,, MS Studio.Net, Platform, Oracle 10g and Developer/6i, Turbo C++, Visual tools, Macromedia Flash, Adobe Acrobat reader, MSSQL Client and other utilities installed.
Major equipment	50 Desktops, All workstations connected through Giga Speed 100 Base-T Fast Switch.
Safety regulations*	Available and communicated

Lab Title	Lab 7
Location	BIIT Main Floor
Objectives	For conducting lab sessions of all computer science related courses.
Adequacy for instruction	Adequate for 25 students at a time. 25 desktops systems. Projector available from Academics office on request by course instructor.
BS Computer Science Courses taught	None.

Software available	Windows 7 Professional operating system enabled workstations. Microsoft Office 2010 (Word, Excel, PowerPoint, MS Visio, MS Project), Macromedia Flash, Adobe Acrobat reader and other utilities installed.
Major	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
equipment	bandwidth of Internet connectivity for research projects.
Safety regulations*	Available and communicated

Lab Title	Project Lab
Location	BIIT Main Floor
Objectives	A specific lab where final semester project students can work on their projects.
Adequacy for instruction	Adequate for 40 students at a time. 10 desktops systems. Projector available from Academics office on request by course instructor.
BS Computer Science Courses taught	No labs of regular courses are scheduled in this lab
Software available	Windows 7 Professional operating system enabled workstations. Microsoft Office 2010 (Word, Excel, PowerPoint, MS Visio, MS Project), Macromedia Flash, Adobe Acrobat reader and other utilities installed.
Major	10 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
equipment	bandwidth of Internet connectivity for research projects.
Safety regulations*	Available and communicated

Lab Title	Hardware Lab
Location	BIIT Main Floor
Objectives	For conducting lab sessions of hardware related CS courses like Basic Electronics, DLD.
Adequacy for instruction	Adequate for 24 students at a time. 25 desktops systems. Projector available from Academics office on request by course instructor.
BS Computer Science Courses	Lab sessions of Basic electronics and DLD are scheduled in this lab.
Software available	Windows 7 Professional operating system enabled workstations. Microsoft Office 2010 (Word, Excel, PowerPoint, MS Visio, MS Project), Macromedia Flash, Adobe Acrobat reader and other utilities installed.
Major	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
equipment	bandwidth of Internet connectivity for research projects.
Safety regulations*	Available and communicated

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:

- Internet usage Proxy setting,
- Proxy setting to use Digital Library,
- Instructions and settings to use printer
- Rules and Regulations for Lab usage
- Lab classes Schedule
- BIIT System proxy settings

However, no written, easy to use manuals are available in the computer labs for learning to use , Microsoft Office Programs etc.

b. Are the resources available sufficient for the program?

Yes, the resources are sufficient for the program.

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) How to use and maintain student account password privacy and its importance?
ii) How to use various software and hardware?
iii) New students are given comprehensive guidance by Lab Personnel in getting oriented to BIIT SYSTEM usage and online-registration as well.

A total of 14 dedicated staff members are working at different time slots to ensure unhindered delivery of knowledge.

The hierarchical levels of Lab staff are as follows:

Designation	No. of Staff
Supervisors i. Network Administrator ii. System Administrator	 1 2
Computer Lab staff i. Laboratory assistants in Lab number 1 & 2 ii. Laboratory assistants in Lab number 3 & 4 iii. Laboratory assistants in Lab number 5 & 6 iv. Laboratory assistants in Lab number 7 iv. Laboratory assistants in FYP lab iv. Laboratory assistants in Hardware Lab	 2 2 2 1 1 1
Attendant	1

Computer lab shifts per lab	Time slots	Personnel
Morning	8:30 AM – 5:00 PM	1
Evening	5:00 PM – 10:00 PM	1

Standard 3-3: Adequate Computing Infrastructure and Facilities

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

No.	Particulars	Quantity
1	Servers	6
2	Desktop Computers	185
3	Video Conferencing equipment	1
4	Color Scanners	1
5	Printers	12
6	Multimedia Projectors	8
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.	

Sufficient space is available in lab for the students to use their own laptops during lab sessions.

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

Based on the information given above, it can be concluded that the computer lab facilities are adequate and up to par for the BS Computer Science Program at BIIT. The above facilities are not exclusively used by BS Computer Science program but are shared for BS Information Technology program. Having stated the above, they are sufficient for the BS Computer Science program. This is so since the BS Computer Science program is run in evening only (timings 6:30 to 9:30 PM) when the graduate programs classes have ended (graduate program class timings 9:00 AM till 6:00 PM), hence these facilities are fully available to the students.

Criterion 4: Student Support and Advising

Standard 4-1: Courses must be offered with sufficient frequency and number for students to complete the program in a timely manner.
Standard 4-2: Courses in the major area of study must be structured to ensure effective interaction between students, faculty and teaching assistants.
Standard 4-3: Guidance on how to complete the program must be available to all students and access to academic advising must be available to make course decisions and career choices.

Standard 4-1: Sufficient Frequency of Course Offering

a. Provide the department's strategy for course offering

The Bachelor program consist of a total of 43 courses having 18 core courses, 8electives, and students must also register for a project of 6 credit hours in final semester. If 10 or more students who are repeating the course register then we offer the same course again. We continually review course and curriculum as to make these markets competitive. Generally, the class strength is 30 to 50 students.

b. Explain how often required courses are offered

- All courses are offered as per course plan (present in the prospectus) given in Criterion 2.
- Courses are offered in every semester as it is a dual entry program.
- 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.

c. Explain how often elective courses are offered

Elective courses are offered for specialization and these are offered in every semester. Students select from the given set of electives courses depending on which discipline of Computing they intend to adopt in future.

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

- At BIIT there is in house permanent faculty to conduct non computer science courses. Such as courses related to management sciences, mathematics and humanities are taught by the permanent faculty members of BIIT

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

We achieve student / faculty interaction through class room discussions and faculty spare exclusive counseling time for individual students. Each faculty, visiting or permanent, has to allocate and spend extra time outside the classroom with students so as to counsel them.

Standard 4-3 Professional Advising and Counseling

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

Students are informed about program requirements through advertisements, prospectus, brochures, student hand book, admissions department, program heads, and orientation, website and BIIT LMS SYSTEM guideline.

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

The advising services are provided through BPO, professional seminars, orientations, workshops, teachers and program managers.

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

Each faculty posts counseling hours on the door, so whenever student has a problem in studying, he/she can visit faculty in counseling hours or by appointment. Students can also discuss their problems with program managers when needed.

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

Students can access BPO, student advisors and faculty. We also arrange professional seminars 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 various student council societies. The BPO is dedicated to enhance the opportunities students have to be successful in their professional as well as personal life. We facilitate students to adapt to new and developing circumstances that challenge their growth as they progress through each grade. Such support may include academic guidance, career counseling, professional grooming, and student support.

The major responsibilities of BIIT's Placement Office (BPO) are the following:

Arranging Internships

BPO facilitates arranging Internships for all students and acts as a liaison between the industry and the business students. Every semester, renowned national and multinational companies including Software houses, private institutions, IT Companies and other organizations contact the BPO to conduct their employment tests, interviews and other on-campus recruitment activities to directly induct BIIT graduates into their organizations.

Thus 6 to 8 week internship with a reputable company is an optional for the students. This is to give the students a foretaste of what actually happens in a commercial firm, an effort to bridge the gulf between the classroom and the corporate world.

Contact is accordingly maintained with major national and multinational companies who are requested to provide internship slots for BIIT students. To make the internship meaningful, sponsors are urged to comment on the intern's performance which is discussed with the student to apprise him or her about strengths and short comings.

On Campus Drives: Various multinational companies are invited to explain their hiring process to students

BPO provides guidance to students in following manner:

- Resumes writing
- Mock interview
- Entry test preparations
- Queries about jobs and internship placements
- Professional grooming

Job Placements

We are operating in highly competitive job market with hundreds of graduates vying for the available vacancies for Management Trainee positions. Thus, BPO serves as a liaison between job seeking BIIT graduates and commercial houses. Wherever possible, companies are urged to come for on-campus recruitment after suitable candidates are lined up. If required, students are helped to prepare an effective resume and also explained the technique of successful interviewing.

At least once a year, a 'Job Fair' is held at the college campus where many leading companies are invited to explain their recruitment procedures and the scenario about present and future vacancies.

Graduate Directory

Employers increasingly rely on the graduate directory. It is a compendium which gives CVs of all students who have graduated during the year and it is distributed free of charge to all leading companies, where it serves as a useful reference book to sift appropriate candidates for present and future vacancies. For ease of reference, students' CVs are arranged separately for each specialization e.g. marketing, finance, human resources, etc.

Alumni

Alumni of BIIT are holding/senior positions in leading companies. It is our endeavor to keep in touch with them and to that end data has to be procured and kept up to date about their current employment status and contact address.

To strengthen the bonds with their alma mater, the alumni are invited as guest speakers on any subject of topical interest before an audience of present students and a dinner for them is periodically arranged as well.

Student Grooming/ Counseling Workshops

BIIT BPO regularly arranges a Corporate Finesse Week comprising of workshop sessions for its graduating classes across programs. Workshop topics generally include:

Potential Employers in Pakistan; Resume Development; Handling Interviews Effectively; What is an office?; Importance of Business Etiquette; Corporate Dinning Manners; Managing Time; Company Culture; Inter Gender Relations at the Work Place; Road Safety etc. BPO also arranges job fair where students can interact with professionals of top notch organizations directly.

Corporate Networking / Alumni Dinner

BIIT holds an annual dinner with its leading alumni and adjunct faculty, particularly those who are gold medalists or work in top multinational organizations, to network with the corporate world for innovative curriculum development, internships, placements, sponsorships and joint activities. This activity is facilitated/ arranged by the BIIT Placement Office (BPO).

Alumni Association

Plans are to form BIIT Alumni Association to reach, serve and engage all alumni and to foster a lifelong intellectual and emotional connection between the BIIT and its graduates. The objective is to create a platform to facilitate and initiate projects which can be mutually beneficial for graduates and their alma mater.

Criterion 5: Process Control

Standard 5-1: The process by which students are admitted to the program must be based on quantitative and qualitative criteria and clearly documented. This process must be periodically evaluated to ensure that it is meeting its objectives.
Standard 5-2: The process by which students are registered in the program and monitoring of students' progress to ensure timely completion of the program must be documented This process must be periodically evaluated to ensure that it is meeting its objectives.
Standard 5-3: The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation, promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting with its objectives.
Standard 5-4: The process and procedures used to ensure that teaching and delivery of course material to the students emphasizes active learning and that course learning outcomes are met. The process must be periodically evaluated to ensure that it is meeting its objectives.
Standard 5-5: The process that ensures that graduates have completed the requirements of the program must be based on standards, effective and clearly documented procedures. This process must be periodically evaluated to ensure that it is meeting its objectives.

Standard 5-1: Admission Criteria

a. Describe the Program Admission Criteria and Process

The Institute offers four year comprehensive undergraduate degree programs and two year graduate degree programs, namely: Bachelor of Science in Computer Science BS(CS), Bachelor of Science in Information Technology BS(IT), Master of Computer Science (MCS) and Master of Information Technology (MIT). In addition to the above mentioned degree programs, the Institute also offers Master of Science in Computer Science MS(CS), and accepts candidates who possess 16-year education with an MCS, MIT, BS(CS) or BS(IT) degree. The MCS and MIT degree programs are two year courses with four taught semesters. The total credit hours of the degree programs are 72 credit hours. It is worth mentioning that MCS is designed to be a Conversion Course for students with no or little background in Computer Science, leading them to a degree of Masters of Computer Science. MIT degree program on the other hand concentrates on a blend of Information Technology, Management Sciences and Computer Science courses, developing IT managers and professionals.

BS (CS) and BS (IT) Prerequisites:

Second division or above with at least 50% marks in A-Levels or Intermediate from recognised institutions, in any of the following areas:

- F.Sc. Pre-Engineering
- I.CS
- F.Sc. with Mathematics
- Other areas may also be judged suitable after scrutiny of courses studied

Selection:

All admissions for undergraduate and graduate students shall be regulated and recommended by the Admission Committee, after compiling a merit list based on the grades/marks obtained in previous qualifications. The merit list will be compiled using the following formulas:

- **BS(CS) and BS(IT):**

  Intermediate 100%

b. Procedure for Admission

1. Every student admitted to the University shall be required to sign an undertaking on judicial stamp paper of the value of Rs. 20/-, duly countersigned by parent and Oath Commissioner assuring that he/she will abide by the Rules and Regulations of the University and such other orders/instructions as may be issued by the administration from time to time.

2. The list of selected candidates will be displayed on the Notice Board according to the schedule notified.

3. Candidates may be admitted in the beginning of the Fall semester or Spring semester. If a selected candidate fails to enroll in time as notified his/her admission will stand cancelled and seat will be offered to the next candidate on the waiting list.

c. Admission of International Students

The credentials of an undergraduate applicant who holds a foreign nationality and who wishes to attend the University are evaluated in accordance with the general regulations governing admission of foreign nationals as approved by the Ministry of Foreign Affairs and the Ministry of Education, Government of Pakistan. Candidates from foreign countries should send their applications through the Embassies of their countries in Islamabad, and these must be routed through the Ministries of Foreign Affairs and Education, Government of Pakistan. No foreign student will be admitted in the University unless his/her admission after due scrutiny of his/her application, is confirmed by the University.

d. Migration

The students from other educational institutions who intend to migrate to this university shall be required to fulfill the following conditions:

1. Reasons for migration must be genuine and plausible.
2. The applicant must fall within our admission merit of first semester of the year in which the student had sought admission.
3. Production of a certificate of good conduct and behavior from the parent institution.
4. Production of detailed marks certificate and the courses studied by the applicant in his/her parent institution and syllabi of courses for equivalence of his/her studies.
5. Migration is not allowed from institutes/universities situated in Rawalpindi or Islamabad area.

The application along with the above documents be routed through the administrative department of the institution and forwarded to the PMAS Arid Agriculture University, Rawalpindi.

Migration is not allowed in the first semester of any degree program.

Transfer Credit

Credits can be transferred for transfer students subject to acceptance by the Equivalence Committee and the minimum acceptable GPA. The minimum residential requirements at PMAS-AAUR for transfer cases shall be 4 semesters in case of Bachelor's students and 2 semesters in case of Master's students.

e. 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 as frequently as twice 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 BIIT System, the automated BIIT 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 BIIT LMS SYSTEM 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.

Online registration is closed one to two weeks after semester begins and then manual registration is allowed from the data cell office upon payment of a late registration fine of Rs. 1000. A deadline for late registration is 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 max two courses is allowed. The request for withdrawal has to be made prior to the twelfth session through BIIT System's Online Course Withdrawal Process.

The request for withdrawal has to be approved by the Course Advisor, Head of Department and Data Cell In-charge. 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:

Attendance: Students are required to maintain 75% 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.

Mid-term and Final Examination Policy: A mid-term exam is administered in the 8th week. The mid-term exams account for 20-25 percent of the final grade and the maximum duration is 1.5 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.

Passing Grades: Minimum passing grade in each course is D. 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 Director.

Evaluation and Quality Points in the General University Regulations

Evaluation:-

(i) The minimum pass marks for each course shall be 40% in Theory and Practical separately.

(ii) Grade points will be as follows:

Marks	Grade	Grade Points	Remarks
80-100%	A	4	Excellent
65-79%	B	3	Good
50-64%	C	2	Satisfactory
40-49%	D	1	Pass
Below	F	0	Fail
	I	0	Incomplete

(iii) The grade point will be worked on the basis of percentage of marks obtained by a student in each course separately according to Quality Points conversion table (given below) and not on the percentage of total marks obtained by a student.

Calculation of GPA/CGPA:-

(i) GPA/CGPA will be calculated at the end of each semester in accordance to the following formula:

$$\frac{\text{Sum of (Credits in a Course} \times \text{Corresponding Quality Points)}}{\text{Total Credit Hours}}$$

(ii) The following Quality Points table will be used for calculating the GPA/CGPA:

Quality Points Table For GPA/CGPA:-

6 credit hr		5 credit hr		4 credit hr		3 credit hr		2 credit		1 credit	
D	6.00	D	5.00	D	4.00	D	3.00	D	2.00	D	1.00
			5.50	33	4.40	25	3.60		2.60	9	1.50
			6.00	34	5.20	26	3.90		3.00	C	2.00
51	8.00		6.50	35	5.60	27	4.50		3.60	11	2.30
			7.00	36	6.00	28	5.10	C	4.00	12	2.70
54	9.00		7.50	37	6.40	29	5.40		4.40	B	3.00
			8.00	38	7.20	C	6.00		4.60	14	3.30
56	10.00		8.50	39	7.60	31	6.30		5.00	15	3.70
			9.00	C	8.00	32	6.60		5.40	A	4.00
			9.50	41	8.40	33	6.90		5.60		
C	12.00	C	10.00	42		34	7.20	B	6.00		
				43	8.80	35	7.50		6.40		
			10.50	44	9.20	36	8.10		6.60		
65	13.80		11.00	45	9.60	37	8.40		7.00		
				46	10.00	38	8.70		7.40		
			11.50	47	10.40	B	9.00		7.60		
			12.00	48		40	9.30	A	8.00		
69	15.20			49	10.80	41	9.60				
			12.50	50	11.20	42	9.90				
			13.00	51	11.60	43	10.20				
				B		44	10.50				
74	16.70		13.50	53	12.00	45	11.10				
			14.00	54	12.40	46	11.40				
				55	12.80	47	11.70				
			14.50	56	13.20	A	12.00				
B	18.00	B	15.00	57	13.60						
				58	14.00						
			15.50	59	14.40						
			16.00	60							
81	19.30			61	14.80						
			16.50	62	15.20						
			17.00	63	15.60						
				A	16.00						
87	21.20		17.50								
			18.00								
			18.50								
92	22.70		19.00								
			19.50								
A	24.00	A	20.00								

Note: 6 Credit hours column is approximate, indicating grade boundaries only, for reference purposes.
In addition to the general regulations given in the University Catalogue, (except 1.c given below) the following regulations are also applicable to all the degrees:

Definitions:- In these regulations unless there is anything repugnant in the subject or context:- Credit Hour means the successful completion of a course of one semester hour in theory or three semester hours in practical per week.

Improvement of Grade:-

(i) During the specified minimum duration for completing the degree, a student may repeat those courses of the previous semester(s) in the Summer Semester, in which he/she had secured a 'D' or 'F' grade, provided the course load does not exceed the maximum limit of credit hours in a semester. Repetition of 'C' or 'B' grade(s) will be allowed after completing 8th semester if, the CGPA is less than 2.50 i.e., degree requirement.

(ii) The course grades that a student earns in the repeated courses shall replace the previously earned course grades. However, the previous grade shall stand if the repeated grade is less than the previous one. The 'D' grade can only be repeated once in a Summer Semester.

(iii) The prerequisite courses in which the student has failed, will have to be cleared immediately at the next available opportunity, provided that his/her maximum workload, including the courses being repeated by the student, will not exceed the normal workload.

Academic Standing:-

(i) Grade Point average

(a) Maximum grade point average: 4.00
(b) Minimum grade point average: 2.50

(ii) To remain on the rolls of the university a student shall be required to maintain the following minimum CGPA in each semester:

Semester	Promotion CGPA
1st Semester	0.75
2nd Semester	1.00
3rd Semester	1.25
4th Semester	1.50
5th Semester	1.75
6th Semester	2.00
7th Semester	2.25
8th Semester	2.50

(iii) A student who does not meet the above requirement for promotion shall cease to be on the university rolls; Summer Semester may be used to overcome this promotion requirement. However, he/she may repeat the whole regular semester only once.

(iv) The course grades that a student earns in the repeated semester shall replace the previously earned course grades.

(v) In the 8th semester, if a student fails to achieve the 2.5 CGPA, he/she shall have to repeat the course/courses with lowest grades, so as to make CGPA of 2.5 within the maximum time period allowed for the degree.

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 BIIT SYSTEM 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

Faculty Recruitment Process

Currently the practice is that the Human Resource department of BIIT advertises the faculty positions every semester through leading newspapers, and BIIT 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.

b. 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.

c. Indicate methods used to retain excellent faculty members

Faculty Retention Methods and Measures

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.

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

i) Highly competitive salary packages.
ii) Flexible working hours within a given work week.
iii) Newly hired faculty is eligible for the Continuing Education once probationary period is completed.
iv) While doing BS under Continuing Education benefit, faculty may get promoted and salary may be revised.

v) Car Loan Financing
vi) Provident fund
vii) Annual Bonus
viii) Annual raise to counter inflationary effect.
ix) Performance Increment policy
x) Capacity Development programs/ workshops
xi) Fully funded trip for presenting own research paper at any Research Conference within
Pakistan (once in a year).
xii) Partially funded trip to an international research conference to present a research paper, (once in 3 years).
xiii) Health benefits
xiv) Publication honorarium,
xv) Thesis and dissertation advisor / committee member honorarium and much more.

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

The Faculty Evaluation and Promotion Process is duly in line with BIIT'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 BIIT 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

These are an outcome of the annual joint meeting of Executive Committee and the Human Resource Department. The Evaluations begin at the end of March and the procedure is well-established. 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 Executive Committee takes the final decision on promotions.

Standard 5-4: Effective Teaching and Learning Process

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

To improve their effectiveness, teachers need first to make their goals and objectives explicit and then to get specific, comprehensible feedback on the extent to which they are achieving those goals and objectives. All this is done via BIIT LMS SYSTEM which is an online portal via which students and teacher interact.

BIIT has state-of-the-art class rooms with all the modern medium of teaching facilities. Like computer, multimedia, white board, Internet facility etc.

All class rooms are air-conditioned and equipped with overhead projectors. Class size is from 30-50 students, which allows the delivery of high quality education on an interactive basis. The teachers' pay individual attention and encourage participation and constructive discussion.

Course related interactive lectures are regularly augmented by co-curricular activities such as:

i) Surprise tests
ii) Class activity
iii) Live projects
iv) Guest speaker sessions
v) Workshops
vi) Group assignments

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 Director gives his comments on all the evaluations and then forwards them to relevant the Head of Departments.

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 Director and his verdict stands.

Standard 5-5: Program Requirements Completion Process

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

Standards and Documented Procedures to Ensure Completion of Degree Program Requirements

Minimum GPA to graduate is 2.5

Two 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 6 years.

Without completing all degree requirements, including, clearance of financial dues, completing the required courses, internship and passing of the comprehensive exam, a student will NOT be allowed to continue on for BS Program. Completion of prerequisites is a necessary condition to advance to higher degree programs.

Minimum Requirements for Award of Bachelor's Degree: -

(i) The minimum duration for completing the course for the degree of BS(CS), and BS(IT) shall be 8 semesters and maximum 12 semesters.

(ii) The course requirement will be 136 or more credit hours for BS(CS) and BS(IT).

(iii) A full time student shall be required to take courses not less than 16 credits hours in a semester.

b. 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 **BIIT Core Committee** 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: There must be enough full time faculty who are committed to the program to provide adequate coverage of the program areas/courses with continuity and stability. The interests and qualifications of all faculty members must be sufficient to teach all courses, plan, modify and update courses and curricula. All faculty members must have a level of competence that would normally be obtained through graduate work in the discipline. The majority of the faculty must hold a Ph.D. in the discipline.
Standard 6-2: All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.
Standard 6-3: All faculty members should be motivated and have job satisfaction to excel in their profession.

Standard 6-1: Faculty Qualifications and Number

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

Dr. Mohammad Jamil Sawar, Professor, Director
Computer Engineering, B.Sc. UT Austin, Texas, USA,
Artificial Intelligence, M.Sc. Edinburgh, UK,
Computer Science, Ph.D. Leeds, UK

Dr. Nadeem Safwan, Professor
HOD MGT
Marketing, MBA, Philippines
Marketing, Ph.D, Philippines

Dr. Umair Abdullah, Associate Professor,
Deputy Director QEC
Computer Science, MCS, BIIT, AAUR, Pakistan,
Computer Science, MS, Foundation University, Islamabad, Pakistan,
Computer Science, Ph.D, Foundation University, Islamabad, Pakistan

Dr. Syed Jawad Hussain, Associate Professor,
Deputy Director Research
Computer Science, MCS, IIUI, Pakistan,
Computer Science, MS, Massey University, New Zealand.
Computer Science, Ph.D, Massey University, New Zealand.

Mr. Ikram Afzal, Assistant Professor
Deputy Director Academics and Administration
Computer Science, MCS, BIIT, AAUR, Pakistan

Mr. Muhammad Ayub, Assistant Professor
Deputy Director Finance
English, MA, AJKU, Pakistan,
Business Administration, MBA, Preston, Pakistan

Dr. Muhammad Abdullah Baig, Assistant Professor
HOD ENG
English Literature , M.A, University of Karachi, Pakistan.
Islamic Studies , M.A, University of Bahawalpur, Pakistan.
Social Sciences , M.Phil, Hamdard University, Karachi , Pakistan.
Linguistics , Ph.D. NUML, Pakistan.

Dr. Munir Ahmad, Assistant Professor
Assistant Director Academics, HOD CS

Computer Science, Ph.D., CUST, Pakistan
Computer Science, MS, MAJU, Islamabad, Pakistan,
Computer Science, BS(CS), AIOU, Islamabad, Pakistan,

Dr. Mohsin Raza, Assistant Professor
HOD Mathematics
Mathematics, BS, COMSATS, Islamabad, Pakistan,
Mathematics, MS, IIU, Islamabad, Pakistan,
Mathematics, Ph.D. IIU, Islamabad, Pakistan

Dr. Naseer Ahmed Sajid, Assistant Professor
HOD IT
Computer Science, MCS, IIU, Islamabad, Pakistan,
Software Engg, MS(SE), MAJU, Islamabad, Pakistan,
Software Engg, Ph.D. CUST, Pakistan

Mr. Farhan Sabir Ujager, Assistant Professor
Assistant Director Student Affairs
Ph.D(in Progress), SZABIST, Pakistan
Information Technology, MS(IT), NUST, Pakistan
Electrical Engineering, BSEE, Northern Uni, Pakistan

Ms. Nadia Arif, Lecturer
Assistant Director Administration
Computer Science, MCS, BIIT, PMAS AAUR, Pakistan
Computer Science, MS(CS). in progress, FUUAST, Pakistan

Dr. Muhammad Zeeshan Muzaffar, Assistant Professor
Computer Science, MCS, Islamia University, Pakistan.
Electronics Engg., MS, IIU, Pakistan.
Electronics Engg., Ph.D. ISRA Uni, Pakistan

Dr. Siraj Rathore, Assistant Professor
Computer Science, MCS, BIIT, AAUR, Pakistan.
Computer Science , MS, CASE, UET, Taxila, Pakistan.
Computer Science , Ph.D. KTH Royal Institute, Sweden.

Dr. Khurram Javed, Assistant Professor
Mathematics, MSC, IIU, Islamabad, Pakistan,
Mathematics, MS, IIU, Islamabad, Pakistan,
Mathematics, Ph.D. IIU, Islamabad, Pakistan

Mrs. Sumaira Asad, Assistant Professor
Information Technology, MIT, AAUR, Pakistan
Management, MS, Abasyn Univ.in progress, Pakistan

Mr. Muhammad Abdullah Abid, Assistant Professor
Electrical Engg, BSc, UET Taxila, Pakistan,
Information Security, MS, NUST, Pakistan

Mr. Shahid Abid, Assistant Professor
Computer Science, MCS, Preston, Pakistan,
Software Engg., MS(CS), AAUR, Pakistan

Mr. Zahid Ahmed, Assistant Professor
Computer Science, MS(CS), BIIT, AAUR, Pakistan
Computer Science, MCS, BIIT, AAUR, Pakistan

Mr. Muhammad Ahsan, Assistant Professor
Computer Science, MCS, IIU, Pakistan
Software Engg, MS(SE), NUST, Pakistan

Mrs. Noor ul Ain, Assistant Professor
Electronics Engg, BSc(Gold Medal), UET, Taxila, Pakistan
Information Security, MS, NUST, Pakistan

Mrs. Maryam Amin, Assistant Professor
Computer Science, BS(CS), IIU, Islamabad, Pakistan,
Software Engg., MS(SE), IIU, Islamabad, Pakistan

Ms. Kainat Anjum, Assistant Professor
MPhil Applied Linguistics, University of Lahore, Pakistan
MA English Literature and Linguistics, NUML , Pakistan

Mr. Naveed Ashraf, Assistant Professor
MS Information and Computer Science, University of Bergen, Norway
BS Information and Computer Science, University of Bergen, Norway
Diploma in French Language, NUML, Islamabad, Pakistan
Diploma in Norwegian Language, University of Bergen, Norway

Dr. Mirza Naveed Baig, Assistant Professor
English , M.A, IIUI, Pakistan.
English , Ph.D. NUML, Pakistan.

Mrs. Tayyaba Baseer, Assistant Professor
Software Engg, MS(SE), Bahria Uni, Islamabad, Pakistan
Computer Science, BS(CS), FUUAST, Islamabad, Pakistan,

Mr. Umar Farooq, Assistant Professor
Computer Science, MS(CS), BIIT, AAUR, Pakistan

Computer Science, MCS, BIIT, AAUR, Pakistan

Ms. Syeda Zar Afshan Gohar, Assistant Professor
Information Technology, MIT, QAU, Islamabad, Pakistan
Information Technology, MS(IT), NUST, Pakistan

Hafiz Muhammad Shafiq Gondal, Assistant Professor
Computer Science, MCS, NUML, Islamabad, Pakistan,
Computer Science, MS(CS), FAST, Islamabad, Pakistan

Mr. Muhammad Ihsan, Assistant Professor
Management, MS, Abasyn Uni, Pakistan
Business Administration, MBA, NUML, Pakistan

Mr. Muhammad Nauman Iqbal, Assistant Professor
Computer Science, MS(CS), BIIT, AAUR, Pakistan
Computer Science, MCS, BIIT, AAUR, Pakistan
Computer Science, Ph.D. in progress, CUST, Pakistan

Mr. Saeed Iqbal, Assistant Professor
Electronics Engg, MCS, QAU, Pakistan,
Electronics Engg, MS, MAJU, Pakistan,
Ph.D.in progress, CIIT , Pakistan

Mr. Azhar Jamil, Assistant Professor
Computer Science, MS(CS), BIIT, AAUR, Pakistan
Computer Science, BS(CS), BIIT, AAUR, Pakistan

Mr. Shahid Jamil, Assistant Professor
Computer Science, MS(CS), UoL, ISB, Pakistan
Computer Science, MSc (CS), QAU, Islamabad, Pakistan,

Mr. Muhammad Aftab Khan, Assistant Professor
Computer Science, MCS, AAUR, Pakistan
Computer Science, MS(CS), NUST, Pakistan

Mr. M. Azeem Mushtaq, Assistant Professor
Computer Science, MCS, BIIT, AAUR, Pakistan,
Computer Science, MS(CS), BIIT, AAUR, Pakistan

Mr. Amir Rashid, Assistant Professor
Computer Science, MCS, AAUR, Pakistan
Computer Science, MS(CS), AAUR, Pakistan

Mrs. Sadia Rashid, Assistant Professor

Computer Science, BS(CS), UOL, Pakistan
Computer Science, MS(CS), UOL, Pakistan

Mr. Shahid Rashid, Assistant Professor
Mathematics, BS, CIIT, Pakistan
Mathematics, MS, HITEC, Pakistan

Mr. Adeel Sohail, Assistant Professor
Commerce, B.Com (Hon), Islamia University, Pakistan
Finance, MBA, SZABIST, Islamabad, Pakistan

Mr. Khalid Mehmood Zaman, Assistant Professor
English, MA, Islamia University Bahawalpur, Pakistan
Linguistics, M.Phil, University of Lahore, Pakistan
Linguistics, Ph.D. in progress, Asia e University, Malaysia

Mr. Abid Jamil, Lecturer
Economics & Finance, MSc, IIU, Pakistan

Mr. Afrasiab Kaikobad, Lecturer
BSIT , BIIT, PMAS AAUR, Pakistan
MS(CS), in progress, CUST, Pakistan

Mr. Muhammad Khalid, Lecturer
English, MA (Language & Lit), Sargodha, Pakistan
Diploma in TEFL, AIOU, Pakistan
LAW, LLB, Punjab University, Pakistan
Advocate High Court, Pakistan

Ms. Jannat Khatoon, Lecturer
BSCS , UIIT, PMAS AAUR, Pakistan
MS(CS), SEECS, NUST, Islamabad, Pakistan

Mr. Muhammad Shabbir, Lecturer
Islamic Studies, MA, Uni of Multan, Pakistan

Mr. Muhammad Qasim Shahzad, Lecturer
Mathematics, BS, Punjab Uni, Pakistan
Mathematics, M.SC, Punjab University, Pakistan

Mr. Waseem Ashraf, Junior Lecturer
Computer Science, BSCS, BIIT, AAUR, Pakistan

Mrs. Rifhat Hashim, Junior Lecturer
Computer Science, BSCS, University of AJK.

Computer Science, MSCS, CUST, Islamabad, Pakistan.

Mr. Ahsan Ijaz, Junior Lecturer
Computer Science, BSCS, NUST, Pakistan
Computer Science, MSCS. in progress, NUST, Pakistan

Ms. Tehmima Ismail, Junior Lecturer
Computer Science, MCS, BIIT, AAUR, Pakistan

Mr. Tahir Javed, Junior Lecturer
Computer Science, MCS, BIIT, AAUR, Pakistan

Ms. Sanam Mir, Junior Lecturer
Computer Science, MCS, BIIT, AAUR, Pakistan

Ms. Adeela Mushtaq, Junior Lecturer
Computer Science, MCS, BIIT, AAUR, Pakistan

Mr. Abdul Rehman, Junior Lecturer
Computer Science, MCS, BIIT, AAUR, Pakistan
Computer Science, MSCS, Iqra University, Islamabad, Pakistan

b. Faculty Distribution by Program Areas

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	Permanent
Computer Science	5 courses / 1 section	26	4
Software Engineering	5 courses / 1 section	10	3
Information Technology	5 courses / 1 section	13	2
Information Security	5 courses / 1 section	3	1

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.

BIIT 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 Rawalpindi city and nationally to update and enhance their knowledge in their core teaching areas.

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
- Annual picnics and social gatherings

b. Indicate how effective these programs are

Programs are effective as:

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

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

Given above in Criterion 1 of this report

Criterion 7: Institutional Facilities

Standard 7-1: The institution must have the infrastructure to support new trends in learning such as e-learning.
Standard 7-2: The library must possess an up-to-date technical collection relevant to the program and must be adequately staffed with professional personnel.
Standard 7-3: Class-rooms must be adequately equipped and offices must be adequate to enable faculty to carry out their responsibilities.

Standard 7-1: New Trends in Learning

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

The following details the infrastructure that is in place to support the new trends in learning[12].

No.	Particulars	Quantity
1	Servers	6
2	Desktop Computers	185
3	Video Conferencing equipment	1
4	Color Scanners	1
5	Printers	12
6	Multimedia Projectors	8
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.	

The above equipment in conjunction with different software's like TeamViewer, Skype, VNC etc. is used for conducting video conferences, online seminars. 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

Based on the information given above, it can be concluded that the computer lab facilities are adequate and up to par for the BS Computer Science Program at BIIT. The above facilities are not exclusively used by BS Computer Science program but are shared for BS Information Technology program. Having stated the above, they are sufficient for the BS Computer Science program. This is so since the BS Computer Science program is run in evening only (timings 6:30 to 9:30 PM) when the graduate programs classes have ended (graduate program class timings 9:00 AM till 6:00 PM), hence these facilities are fully available to the students

Standard 7-2: Library Collection and Staff

a. Describe the adequacy of Library's technical collection

BIIT library 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. In addition the library subscribes to a number of Digital on Line libraries (IEEE and ACM).

Library Resources (Computer Sciences)

No.	Particulars	Quantity
1	**Printed Form**	
	A. Computer Sciences Books	**2536**
	B. Reports	
	i. Project	**1320**
	ii. Thesis	**21**
	C. Journal/Magazines (Subscribed)	**5**
	D. Newspapers (Daily)	**5**
2	**Digital Form**	
	A. E-Books	**1200**
	B. Access to Online Journals	
	i. BIIT Digital Library	**15**

b. Describe the support rendered by the Library

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

i. Respond to daily-on-site reissue requests for books.
ii. Train library users to effectively search the Library catalogue, Internet and other electronic resources.
iii. Book and other reading material lending services iv. Receiving and persevering all reading material
v. Information access in digital form
vi. To search newly available books in market and on internet and make a list of required ones'.

Library Staff Timing

Shift	Time slots	Personnel
Morning	8:30 AM – 5:00 PM	2
Evening	5:00 PM – 10:00 PM	2

Standard 7-3: Classroom and Office Adequacy

a. Describe the adequacy of the class rooms

Class rooms have sufficient space and are equipped with all necessary material for teaching.

b. Describe the adequacy of faculty offices

Rooms are allocated for permanent and visiting faculties where latest CoreI5 PCs are available with full internet facilities, landline extensions, Split air conditioners, shelves display boards to display their objectives schedules and more over it is essential for all the faculty members to display their semester schedule on their doors for consulting of the students and faculty's availability.

Criterion 8: Institutional Support

Standard 8-1: There must be sufficient support and financial resources to attract and retain high quality faculty and provide the means for them to maintain competence as teachers and scholars.
Standard 8-2: There must be an adequate number of high quality graduate students, research assistants and Ph.D. students.
Standard 8-3: Financial resources must be provided to acquire and maintain Library holdings, laboratories and computing facilities.

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

Permanent faculty is being hired on handsome salary package, which includes basic salary, conveyance medical and house rent allowance. Similarly, whenever necessary visiting faculty is also hired at competitive market rates.

Inflation increment of around 10 percent on basic salary is provided and after every year a bonus is awarded to every employee in the month of October. Also on annual progress report and recommendation on excellent work or achievement for BIIT, salary is increased by 5% or some award in the shape of money is awarded to the faculty members. After three years of successful teaching in BIIT, three bonus salaries are provided to the faculty.

After the completion of the permanent faculty probation period (i.e. 6 months), BIIT offers them to continue with their higher studies according to their needs without any payment but they have to sign an agreement to serve the institution for five years after completion of their respective degree.

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

There are a number of dedicated academic staff members who provide secretarial and technical support to the institute. The support includes:

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

Rooms are allocated for permanent and visiting faculties where Core I5 PCs are available with full internet facilities, landline extensions, Split air conditioners, shelves display boards to display their objectives schedules and more over it is essential for all the faculty members to display their semester schedule on their doors for consulting of the students and faculty's availability.

Standard 8-2: Number and Quality of GSs, RAs and PhD Students

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

Particulars	No. of Graduates		
	2018	2019	2020
Graduates BSCS	141	151	144

There are no research assistants in BSCS, instead a need based and merit based scholarships are offered to BSCS students who work as Teaching Assistants with the faculty.

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

Graduates to Faculty Ratio

Particulars	2018	2019	2020
Total Number of Graduates	141	151	144
Total Number of Faculty	48	44	56
Graduates/ Faculty Ratio	**2.9 : 1**	**3.4 : 1**	**2.6:1**

Number of Faculty

Particulars	2018	2019	2020
Total Number of Faculty	**48**	**44**	**56**

Standard 8-3 Financial Support for Library and Computing Facilities

a. Describe the resources available for the library

Particulars	Budgetary Allocation (Rupees)		
	2018	2019	2020
Library	180,000	210,000	300,000

b. Describe the resources available for laboratories and computing facilities

Particulars	Budgetary Allocation (Rupees)		
	2018	2019	2020
Laboratories and Computing Facilities	500,000	600,000	700,000

Data Sources

Following data sources have been used for the preparation of this Self Assessment Report

1. QEC (HEC) Self Assessment Manual
2. NCEAC Curriculum approved 2017
3. BIIT Prospectus
4. BPO Internal Report 2020
5. BIIT HR Manual
6. BIIT Admin Record
7. BIIT Accounts department
8. BIIT Data Cell