Virtual University of Pakistan

Assessment Team Report

Department: Computer Science & IT

Program Title: BS in Computer Science

Assessment Cycle: Cycle-IV

Assessment Year: 2024-25

Criteria Referenced Evaluation

#	Standards' Title	Weightage	Approved	Approved with Recommendations	Approved with Conditions	Not Approved	Score
Standard-1	**Programme Mission, Objectives & Outcomes**	15%		✓			**11.10**
Standard-2	**Curriculum Design & Organization**	20%		✓			**18.00**
Standard-3	**Subject-Specific Facilities**	15%		✓			**11.40**
Standard-4	**Student Support & Advising**	10%		✓			**9.00**
Standard-5	**Teaching Faculty/Staff**	20%			✓		**14.00**
Standard-6	**Institutional Policies & Process Control**	10%		✓			**8.77**
Standard-7	**Institutional Support & Facilities**	5%					**NA**
Standard-8	**Institutional General Requirements**	5%					**NA**

Signature of Assessment Team Lead:
Name | Prof. Dr. Rabeeh Ayaz Abbasi
Designation | Professor

Signagure of DQE Coordinator:
Name | Dr. Mubashar Majeed Qadri
Designation | Manager Quality Assurance

Standard-1 Programme Mission, Objectives & Outcomes						Weight = 0.15

Factors Score		NA	5	4	3	2	1
1	Institution and department mission statements are documented and aligned with the Programme Educational Objectives (PEOs).	☐	☑	☐	☐	☐	☐
2	PEOs define expected graduate achievements a few years after graduation, supported by a strategic plan outlining necessary actions.	☐	☐	☑	☐	☐	☐
3	Every PEO includes evidence of its alignment with institutional mission, assessment strategies and timelines, along with documentation of implemented improvements.	☐	☐	☑	☐	☐	☐
4	Programme Learning Outcomes (PLOs) are aligned with the PEOs and use of action verbs support their attainment.	☐	☑	☐	☐	☐	☐
5	The extent to which graduates achieve PLOs is assessed using defined methods such as alumni, graduating student, and employer surveys.	☐	☐	☐	☑	☐	☐
6	Survey data are collected systematically, analyzed, and presented in the report, with documented use of results for timely program improvements.	☐	☐	☐	☑	☐	☐
7	Accreditation outcomes and feedback are documented, with corresponding actions taken and planned improvements clearly described.	☐	☐	☐	☐	☑	☐
8	The program's strengths, weaknesses, and major future development plans are identified and supported by evidence.	☐	☐	☑	☐	☐	☐
9	The department conducts periodic performance reviews using quantifiable measures to inform strategic decisions and continuous improvement.	☐	☐	☑	☐	☐	☐
10	Students are actively engaged in program evaluation, with documented evidence of their participation and feedback impact.	☐	☐	☐	☑	☐	☐
Total Encircled Value (TV)		0	10	16	9	2	0
Score 1 (S1) = [TV/(No. of Questions *5)] *100 *Weight =		**11.10**					

Standard-1 Programme Mission, Objectives & Outcomes			
Comments/Observations/Key Findings:		**Recommendations/Conditions**	
1	Well-defined PEOs and PLOs with some outcome mapping.	1	Implement employer satisfaction surveys and integrate them into the PLO assessment loop.
2	Rich survey data from graduating students.	2	Operationalize continuous improvement through tracking of feedback-based changes.
3	Identified gaps in curriculum, hands-on skills, and ethics are acknowledged.	3	Pursue national and international accreditation to ensure external validation and credibility.
4	No employer survey or external accreditation outcomes yet.	4	Enhance evidence of student engagement by documenting how feedback has been acted upon (e.g., course updates, assessment redesign, virtual labs).
5	Lack of direct, systematic linkage between student feedback and implemented changes.	5	
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Standard-2 Curriculum Design & Organization		NA	5	4	3	2	1
Factors Score		NA	5	4	3	2	1
1	The curriculum is consistent and support the programme's documented objectives.	☐	☑	☐	☐	☐	☐
2	Theoretical background, problem analysis and solution are stressed within the programme's core material.	☐	☑	☐	☐	☐	☐
3	The curriculum satisfies the core requirements for the programme, as specified by the respective accreditation body and HEC curricula.	☐	☑	☐	☐	☐	☐
4	The curriculum satisfies the major requirements for the programme as specified by HEC and the respective accreditation body/councils.	☐	☐	☑	☐	☐	☐
5	The curriculum satisfies general education, arts, and discipline requirements for the programme, as specified by the respective accreditation body/council.	☐	☐	☑	☐	☐	☐
6	Information technology components of the curriculum is integrated throughout the programme.	☐	☑	☐	☐	☐	☐
7	Oral and written communication skills of the student are developed and applied in the programme.	☐	☐	☐	☑	☐	☐
8	Different feedback surveys conducted each semester for each course from students and faculty.	☐	☑	☐	☐	☐	☐
Total Encircled Value (TV)		**0**	**25**	**8**	**3**	**0**	**0**
Score 2 (S2) = [TV/(No. of Questions *5)] *100 *Weight =		**18.00**					

Weight = 0.20

Standard-2 Curriculum Design & Organization			
Comments/Observations/Key Findings:		**Recommendations/Conditions**	
1	Strong alignment of curriculum with PLOs and HEC requirements.	1	Establish a formal curriculum review committee that includes industry experts and alumni to ensure up-to-date, market-relevant curriculum changes.
2	Integration of theoretical foundation and practical skills across multiple subjects.	2	Introduce rubrics or assessments for Verbal communication skills in major CS courses and projects.
3	Well-documented coverage of general education and professional courses.	3	Strengthen mechanisms for feedback utilization from students and faculty (e.g., curriculum revisions, course improvements).
4	Extensive use of IT tools and digital learning content across the curriculum.	4	
5	Absence of a formal and documented process for regular curriculum revision.	5	
6	Limited hands-on learning (lab access, real projects) due to virtual mode.	6	
7	Industry and accreditation body feedback missing due to lack of formal linkages.	7	
8	Lack support for Courses contents revisions	8	
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Standard-3 Subject-Specific Facilities						Weight = 0.15
Factors Score	**NA**	**5**	**4**	**3**	**2**	**1**

#	Criterion						
1	Laboratory and computing facilities supporting the program are documented, including their adequacy, accessibility, and alignment with program requirements.	☐	☐	☑	☐	☐	☐
2	Students and faculty have timely access to up-to-date manuals, instructions, and safety documentation, with evidence of availability and use.	☐	☐	☑	☐	☐	☐
3	Each laboratory includes details on technical support personnel, the level and nature of instructional support, and resource availability.	☐	☐	☑	☐	☐	☐
4	Computing infrastructure (hardware, software, and networks) is sufficient to meet the program's teaching and learning needs.	☐	☐	☑	☐	☐	☐
5	Laboratory and computing facilities are regularly assessed against similar programs at top HEIs, with deficiencies and improvements documented.	☐	☐	☐	☑	☐	☐
	Total Encircled Value (TV)	**0**	**0**	**16**	**3**	**0**	**0**
	Score 3 (S3) = [TV/(No. of Questions *5)] *100 *Weight =	**11.40**					

Standard-3 Subject-Specific Facilities

	Comments/Observations/Key Findings:		Recommendations/Conditions
1	VUP provides accessible online learning infrastructure (LMS, e-content, video lectures).	1	Develop and integrate virtual lab platforms (e.g., browser-based simulators, cloud IDEs, virtual networking labs) to enhance practical skill development.
2	Computing resources for remote learners (e.g., recorded labs, virtual interaction platforms) are leveraged efficiently in the virtual model.	2	Initiate a formal benchmarking process with other top HEIs (particularly ODL institutions) to identify gaps and set infrastructure development goals.
3	No real hands-on lab infrastructure or virtual equivalents for courses requiring experiments, simulation, or implementation (e.g., networking, databases).	3	Explore partnerships with cloud providers or open-source virtual lab platforms (e.g., Cisco Packet Tracer, AWS Educate, GitHub Codespaces) for enhanced lab delivery.
4	No benchmarking with physical or hybrid university facilities.	4	
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Standard-4 Student Support & Advising		NA	5	4	3	2	1
Factors Score		**NA**	**5**	**4**	**3**	**2**	**1**
1	The department has a documented strategy for course offerings, including the frequency of major, elective & allied courses offered by other departments.	☐	☑	☐	☐	☐	☐
2	Courses taught by multiple instructors have clear coordination mechanisms to ensure effective student–faculty interaction and instructional consistency.	☐	☑	☐	☐	☐	☐

Weight = 0.10

3	Students are clearly informed about program requirements through accessible and timely communication channels.	☐	☑	☐	☐	☐	☐
4	An academic advising system is in place, with mechanisms for evaluating its effectiveness.	☐	☐	☑	☐	☐	☐
5	A student counselling system exists, providing access to professional support services when needed, with evidence of availability and utilization.	☐	☐	☑	☐	☐	☐
6	Students have documented opportunities to engage with practitioners and participate in technical and professional societies.	☐	☐	☑	☐	☐	☐
Total Encircled Value (TV)		**0**	**15**	**12**	**0**	**0**	**0**
Score 4 (S4) = [TV/(No. of Questions *5)] *100 *Weight =		**9.00**					

Standard-4 Student Support & Advising

	Comments/Observations/Key Findings:		Recommendations/Conditions
1	Strong digital communication infrastructure: LMS, SMS alerts, and portal-based announcements keep students updated.	1	Launch or partner with student counselling services (mental health and academic), ensuring availability of professional help and promoting its use.
2	Students are satisfied with the structure and timing of course offerings.	2	Facilitate interaction with professional bodies (IEEE, ACM, etc.) and document student participation in technical events and societies.
3	Program structure and study scheme are clearly published online.	3	Students need more documented oppertunities. This may potentially happen through different measures such as through the establishment of placement cell, and project opperutnities that arise from time to time at the national and international level.
4	No evidence of professional counselling services or student mental health support.	4	
5	Engagement with industry professionals or student societies is minimal and undocumented.	5	
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Standard-5 Teaching Faculty/Staff		NA	5	4	3	2	1
Factors Score		**NA**	**5**	**4**	**3**	**2**	**1**
1	A web page shows program areas and the number of specialized teaching staff, along with faculty CVs is publically available.	☐	☑	☐	☐	☐	☐
2	Teaching staff strength is sufficient to deliver the curriculum and achieve programme objectives.	☐	☐	☑	☐	☐	☐
3	Student feedback on teaching and assessment is collected each semester and used for instructional improvement.	☐	☐	☑	☐	☐	☐
4	The department has defined criteria for faculty currency in the discipline, and the percentage of faculty meeting these criteria is documented.	☐	☐	☐	☑	☐	☐
5	Mechanisms are in place to ensure full-time faculty have adequate time for scholarly and professional development.	☐	☐	☐	☑	☐	☐
6	Teaching staff development programs are available at departmental and institutional levels, with documented evidence of effectiveness.	☐	☐	☐	☑	☐	☐
7	Faculty development programs are evaluated regularly, and results are used for program enhancement.	☐	☐	☐	☑	☐	☐
8	Programs for faculty motivation and job satisfaction are implemented, with effectiveness measured through periodic faculty surveys.	☐	☐	☐	☑	☐	☐
Total Encircled Value (TV)		**0**	**5**	**8**	**15**	**0**	**0**
Score 5 (S5) = [TV/(No. of Questions *5)] *100 *Weight =		**14.00**					

Weight = 0.20

Standard-5 Teaching Faculty/Staff				
Comments/Observations/Key Findings:			**Recommendations/Conditions**	
1	Dedicated teaching staff covers a wide range of technical subjects.	1	Formalize faculty development programs with structured activities, training sessions, and budgeted support.	
2	Feedback is collected from students through systematic LMS surveys each semester.	2	Establish clear criteria for faculty currency (e.g., research output, certifications) and monitor compliance annually.	
3	No formal structure for faculty development, scholarly work planning, or motivation.	3	Create faculty motivation mechanisms (e.g., competitive salaries, teaching awards, research grants, recognition systems).	
4	Absence of structured performance evaluation, mentoring, or workload policies.	4	Introduce a faculty workload model that allocates time for teaching, mentoring, research, and training.	
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Standard-6 Institutional Policies & Process Control		Weight = 0.10					
Factors Score		**NA**	**5**	**4**	**3**	**2**	**1**
1	Admission criteria are clearly defined and communicated to prospective students, and periodically evaluated for improvement.	☐	☑	☐	☐	☐	☐
2	Policies and procedures for credit transfer are documented and accessible.	☐	☑	☐	☐	☐	☐
3	Student registration processes are clearly outlined, and academic progress is systematically monitored to ensure adherence to degree requirements.	☐	☑	☐	☐	☐	☐
4	Procedures are in place to verify that graduates meet all programme requirements, with periodic evaluations to inform improvements.	☐	☐	☑	☐	☐	☐
5	Processes for recruiting and retaining qualified teaching staff are documented, aligned with the institutional mission, and evaluated for effectiveness.	☐	☐	☑	☐	☐	☐
6	Faculty evaluation and promotion processes reflect institutional mission and are periodically reviewed for continuous improvement.	☐	☐	☑	☐	☐	☐
7	Teaching and learning processes are designed to ensure instructional effectiveness and student-centered learning, using evaluation mechanisms for improvement.	☐	☐	☑	☐	☐	☐
8	Academic and support information is provided to prospective and current students to support informed decision-making and successful progression.	☐	☑	☐	☐	☐	☐
9	Programme expectations and student responsibilities are clearly communicated throughout the study period.	☐	☐	☑	☐	☐	☐
10	Upon graduation, students receive a comprehensive academic record reflecting their achievements.	☐	☑	☐	☐	☐	☐
11	Programme practices align with institutional values, ethical standards, and policies on equality, diversity, inclusion, and academic integrity.	☐	☐	☑	☐	☐	☐
12	Transparent procedures exist to safeguard the rights and interests of students, faculty, and staff, including handling of complaints and appeals.	☐	☑	☐	☐	☐	☐
13	All critical processes (admissions, teaching, student progress, evaluation) are periodically reviewed, and evaluation results are used for enhancement.	☐	☐	☐	☑	☐	☐
Total Encircled Value (TV)		**0**	**30**	**24**	**3**	**0**	**0**
Score 6 (S6) = [TV/(No. of Questions *5)] *100 *Weight =		**8.77**					

Standard-6 Institutional Policies & Process Control			
Comments/Observations/Key Findings:		**Recommendations/Conditions**	
1	Well-developed LMS ensures effective registration, teaching, and graduation tracking.	1	Track and use faculty promotion and evaluation outcomes for continuous policy refinement.
2	Communication with students via multiple channels is strong.	2	
3	Admission and credit transfer policies are accessible and functional.	3	
4	Limited documentation on faculty retention or motivation strategies.	4	
5	Evaluation feedback rarely results in clearly documented improvements.	5	
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Standard-7 Institutional Support & Facilities						Weight = 0.05	
Factors Score		**NA**	**5**	**4**	**3**	**2**	**1**
1	The programme provides a self-evaluation of its compliance with standards, identifying gaps and plans for improvement where needed.	⃠	☐	☐	☐	☐	☐
2	Secretarial support, technical staff, and office equipment are sufficient to support programme operations.	⃠	☐	☐	☐	☐	☐
3	Data on graduate students, research assistants, and PhD students over the past three years are provided, along with teacher-to-graduate student ratios.	⃠	☐	☐	☐	☐	☐
4	Library, laboratory, and computing resources are documented, and their adequacy assessed relative to programme needs.	⃠	☐	☐	☐	☐	☐
5	Facilities and infrastructure supporting modern teaching and learning practices are available and evaluated for adequacy.	⃠	☐	☐	☐	☐	☐
6	The library's technical collection and user support services are sufficient to meet academic and research needs.	⃠	☐	☐	☐	☐	☐
7	Classrooms and faculty offices are adequate in number, space, and functionality to support effective teaching and learning.	⃠	☐	☐	☐	☐	☐
Total Encircled Value (TV)		**7**	**0**	**0**	**0**	**0**	**0**
Score 7 (S7) = [TV/(No. of Questions *5)] *100 *Weight =		**Not Applicable**					

Standard-7 Institutional Support & Facilities			
Comments/Observations/Key Findings:		**Recommendations/Conditions**	
1	This standard criteria may be addressed in Review of Performance Effectiveness (RIPE) report	**1**	
2		**2**	
3		**3**	
4		**4**	
5		**5**	
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9		**9**	
10		**10**	

Standard-8 Institutional General Requirements						Weight = 0.05
Factors Score		**NA**	**5**	**4**	**3**	**2**	**1**

		NA	5	4	3	2	1
1	Postgraduate research programmes are offered only when institutional academic standards—aligned with national expectations—can be met.	⊘	☐	☐	☐	☐	☐
2	Detailed regulations on admission, registration, assessment, and awarding are documented, accessible, and open to review by the institution and department.	⊘	☐	☐	☐	☐	☐
3	Research activities align with regional, national, and international societal and industrial needs.	⊘	☐	☐	☐	☐	☐
4	Research opportunities are offered only where appropriate academic supervision, research infrastructure, and student support are available.	⊘	☐	☐	☐	☐	☐
5	Publicity materials for research programmes are clear, accurate, and detailed enough to support informed student choice.	⊘	☐	☐	☐	☐	☐
6	Admission procedures are well-defined, consistently applied, and ensure that only qualified candidates are selected through a multi-expert review process.	⊘	☐	☐	☐	☐	☐
7	Admissions processes are fair, transparent, and promote equality of opportunity.	⊘	☐	☐	☐	☐	☐
8	Research student entitlements and responsibilities are clearly defined and communicated at the start of the programme.	⊘	☐	☐	☐	☐	☐
9	New research students are supported with orientation activities that help them understand the academic and social environment of the institution.	⊘	☐	☐	☐	☐	☐
10	The feasibility of research projects is assessed prior to admission, for both full- and part-time students.	⊘	☐	☐	☐	☐	☐
11	Research students have access to sufficient training to develop the skills required for completing their research and preparing for future careers.	⊘	☐	☐	☐	☐	☐
12	Supervisors are qualified subject experts with the skills and experience necessary to guide, monitor, and support research students.	⊘	☐	☐	☐	☐	☐
13	Research supervision is structured to ensure consistent progress tracking and timely communication with students.	⊘	☐	☐	☐	☐	☐
14	Research assessment processes are clearly defined, rigorous, fair, consistent, and well communicated to both students and supervisors.	⊘	☐	☐	☐	☐	☐
15	Systems have been set up to collect and address feedback from students and supervisors about the research experience and support infrastructure.	⊘	☐	☐	☐	☐	☐
16	Clear procedures for complaints and appeals are documented, consistently enforced, & readily available to provide support throughout the process.	⊘	☐	☐	☐	☐	☐
17	The institution regularly reviews its effectiveness in meeting the quality standards (Precepts) of research degrees awarded in its name.	⊘	☐	☐	☐	☐	☐
Total Encircled Value (TV)		**17**	**0**	**0**	**0**	**0**	**0**
Score 8 (S8) = [TV/(No. of Questions *5)] *100 *Weight =		**Not Applicable**					

Standard-8 Institutional General Requirements				
	Comments/Observations/Key Findings:			**Recommendations/Conditions**
1		1		
2		2		
3		3		
4		4		
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8		8		
9		9		
10		10		

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

= 11.1 + 18.00 + 11.40 + 9.00 + 14.00 + 8.77 + NA + NA

= 72.27 / 90 (80.3%)

Note: Score Normalized as '02' Standard(s) is (are) 'Not Applicable'.

OVERALL JUDGEMENT = **Approved with Recommendations**

Overall Comments by Assessment Team:

The Assessment Team acknowledges the sincere effort put into the preparation of the BSCS Self-Assessment Report by the Program Team. The SAR provides a comprehensive overview of the program's objectives, curriculum, delivery mechanisms, and support structures within the context of a virtual learning environment.

The program demonstrates strong alignment with national academic standards, particularly in curriculum design and digital delivery infrastructure. However, some critical areas require further development, including hands-on lab facilities, faculty development, industry engagement, and mechanisms for using feedback systematically for continuous improvement.

We also commend the Quality Enhancement Cell (QEC) Team for developing an excellent rubric calculator that has significantly enhanced the objectivity, transparency, and quantification of this assessment process. It is a valuable tool that has helped streamline and standardize program evaluations.

Comments by DQE Coordinator: