Programme Review Report

Bachelor of Science Honours in Computer Science
Department of Computer Science
Faculty of Science
University of Jaffna

Site Visit Dates: 7th – 9th November 2022

Review Panel: Prof. Prasad M. Jayaweera (Chair)
Prof. Sriyani Wickramasinghe
Dr. M.B.M. Irshad

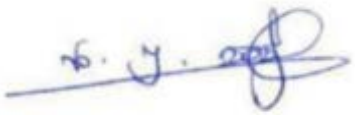
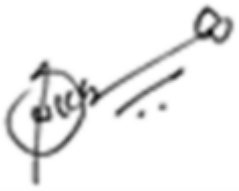
The Quality Assurance Council
University Grants Commission, Sri Lanka

1. **University : University of Jaffna**

2. **Faculty : Faculty of Science**

3. **Programme : Bachelor of Science Honours in Computer Science**

4. **Review Panel :**

Name	Signature
Prof. Prasad M. Jayaweera Chair – Review Panel	
Prof. Sriyani Wickramasinghe Member – Review Panel	
Dr. M.B.M. Irshad Member – Review Panel	

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Section 1: Introduction to Study Programme

1.1 University of Jaffna

The establishment of the University of Jaffna commenced in 1974 with the establishment of the Campus of the University of Sri Lanka in Jaffna by an Order made by the Honorable Minister of Education. The campus was raised to an independent and autonomous university bearing the name University of Jaffna (UoJ) on January 01, 1979. The academic and administrative activities of the University are governed and managed under the provisions made by the Universities Act. No. 16 of 1978., as amended subsequently.

At the beginning, the University was located in the Parameswara College premises founded by the veteran philanthropist, Sir Ponnambalam Ramanathan. The UoJ Jaffna has grown over the years, and today it consists of eleven faculties with seventy-one academic departments, several academic support service units and centers.

As of 2022, the student population of the University was around seven thousand, and this number included about six thousand plus internal undergraduate students and around five hundred postgraduate students. At present, the University provides accommodation facilities to a limited number of students and as a result, a majority of the students reside in outside in non-university accommodation.

Vision

To be a leading centre of excellence in teaching, learning, research and innovation, scholarship and community engagement.

Mission

To train intellectually and professionally competent graduates and postgraduates in alignment with current and emerging needs of the national and international community, engage in research and innovation and research commercialization, promote scholarship and engage with industry and community with a special emphasis on the social, economic and cultural needs of Northern Sri Lanka.

1.2 Faculty of Science

The Undergraduates' Section of the Jaffna College's former Vaddukoddai location became the Faculty of Science in October 1974. On October 25, 1974, the Faculty enrolled its first group of 103 students, and at that time, it only offered courses in mathematics and statistics. The study programmes in physical science and biology streams were launched in 1975. In the academic year of 1975/76, the first batch of 35 students was admitted to these

study programmes.

Along with these developments, the construction of buildings for the Faculty of Science was commenced at Thirunelvely, where the Faculty of Humanities and the administrative complex of UoJ were located as the facilities available in the small laboratories at Vaddukoddai were found to be inadequate for work beyond the 1st year courses of science degree programmes and future development requirements. The Faculty moved to the Thirunelvely premises in June 1978. A building for the Department of Physics was given funding in 1977, and it was occupied in September 1980. Two more buildings, one for the Department of Mathematics and Statistics and the other for the Department of Chemistry were also approved for funding in 1979. The construction work of Mathematics building and Chemistry buildings were completed in 1985 and 1988, respectively. The Stage II of the Natural Science Block was commissioned for academic activities in 2013. The construction of a new building for the Department of Computer Science, funded by the World Bank's AHEAD Project was commenced in June 29, 2019, and the building was commissioned for academic activities in May 2022, and the Department of Computer Science began operating from the new facility on June 1, 2022.

The Departments of Botany, Chemistry, Computer Science, Fisheries, Physics, Mathematics and Statistics, and Zoology are the seven departments that make up the Faculty of Science. The Faculty is served by 95 academic staff members, 59 academic support staff members, and 80 non-academic staff members. Nearly two-thirds of the permanent academic staff have PhDs, and more than 95% have postgraduate degrees. The student population consists of students from various racial and ethnic backgrounds. The multiethnic community has created a welcoming, multicultural environment that fosters and promotes greater ethnic cohesion and social harmony. Since 2016, a small number of overseas students have also been admitted to the Faculty under the President's Scholarship Programme. The annual intake of students has grown from around 250 in the middle of the 1980s to the current level of 1300 students.

Vision

To be a recognized centre of science learning in Sri Lanka

Mission

To produce competent graduates who excel in learning and research in basic sciences and who could contribute to the development of the nation

1.3 Department of Computer Science

The Department of Computer Science (DCS) of the Faculty of Science was founded in 1991, and it commenced offering computer science as a course for students in the physical science stream. In 2007, a new degree programme called the Bachelor of Science Honours

in Computer Science was launched and admitted students through a separate window. In addition, the DCS in 2015 launched another study programme in which the students in physical science stream who were not accepted into the honours degree programme in computer science are given the opportunity to major in the computer science in the extended fourth-year leading to Bachelor of Science in Applied Science in Computing.

Vision

To be a leading center for quality education and high-end research in computer science**.**

Mission

To produce socially responsible computer science professionals possessing effective problem-solving skills, research, leadership and entrepreneurial skills to be successful citizens contributing to the development of the region and the nation.

Study Programmes Offered

The Department of Computer Science (DCS) was established in 1991, and it commenced offering the Computer Science as a course for the Physical Science students. In 2007, the DCS launched a new degree programme called the Bachelor of Science Degree in Computer Science (BSc in Computer Science) and the students for this programme were directly admitted by the UGC under the Computer Science (Direct- intake) stream. In 2015, the DCS commenced offering an extended fourth year for students reading in physical science stream who were not accepted into the special degree programme in computer science leading to BSc in Applied Science in Computing. The details of the degree programmes offered by the DCS are given in Table 1.1.

Table 1.1 Degree Programmes offered by the Department of Computer Science

Stream	Name of the Degree	Abbreviation of the Degree	SLQF Level
Direct-intake into Computer Science	Bachelor of Science in Computer Science	BSc (Computer Science)	5
	Bachelor of Science Honours in Computer Science	BSc (Honours) in Computer Science	6
	Bachelor of Science	BSc	5

Physical Science	Bachelor of Science (Honours) in Computer Science	BSc (Honours) in Computer Science	6
	Bachelor of Science (Honours) in Applied Science in Computing	BSc (Honours) in Applied Science in Computing	6

The study programmes in computer science offered by the DCS have established a good reputation for their curricula and the high-caliber graduates they produce. As of 2018, about 325 undergraduate students were enrolled at the DCS, including four international students from Nepal, Bangladesh, Pakistan, and Afghanistan. There were seven postgraduate students. All three ethnic groups are represented in the population: Tamils (46%), Sinhalese (45%) and Muslims (9%). The student enrollment into Computer Science degree programmes during the past few years are given in Table 1.2.

Table 1.2: Student Enrollment into BSc (Honours) in Computer Science

Academic Year	Tamils	Sinhalese	Muslims	Foreign Students	Total
2016	12	23	7	-	42
2017	18	21	8	1	48
2018	20	22	6	-	48
2019	16	28	4	-	48
2020	18	46	5	-	69
2021	13	68	12	-	93

1.4 Bachelor of Science Honours in Computer Science Study Programme

The study programme leading to BSc (Honors) in Computer Science is offered to the students admitted through the direct- intake and the curriculum of study programme is aimed to nurture students in fundamentals and emerging trends in Computer Science including Artificial Intelligence, Bioinformatics, Computer Graphics, Data Communications and Computer Networks, High Performance Computing, Human Computer Interaction, Image Processing, Machine Learning, Mobile Computing, Software Engineering, and Web Technologies. The curricula of three-degree programmes were designed and developed by the academic staff of the DCS in consultation with subject matter experts drawn from reputed universities and the IT sector. The curricula have been regularly revised in

accordance with ACM and IEEE guidelines to meet the evolving needs of the modern world. In addition, the curriculum prepares the students to the 'world of work' through Industrial Training and Students Research Projects which are offered as curricular activities and also through diverse co-curricular activities. Since 2011, the DCS has maintained strong partnerships with top IT firms such as WSO2, Virtusa, 99X Technology, IFS, and hSenid Mobile Solutions for the purposes of enriching the teaching and learning programme. Further, in 2022 the DCS has secured funding through the World Bank-funded AHEAD project for a new building and other related infrastructure.

The curriculum of the study degree programme ensures that the students get solid knowledge and skills in core discipline and acquire well- balanced socio-emotional skills. The DCS curriculum requires students to work in groups of three to four students on projects that require them to design software systems in order to inculcate the required knowledge, skills, abilities, and attitude necessary to demonstrate leadership, teamwork, and problem-solving skills. Further the honours degree requires students to do an independent research project in addition to the group project that will help them improve their information management and utilization skills. Additionally, students are offered with many opportunities to make oral and poster presentations at the Sri Lanka Student Workshop on Computer Science (SL-SWCS), showcase their apps at software hackathons. Moreover, this degree programme helps students to conduct their research work in collaboration with the academic staff of the DCS and present research communication in conferences and publish in conference proceedings and journals.

1.5 Profile of Academic Staff of DCS

The distribution of the academic and non-academic staff directly related to the study programme is given below in Table 1.3.

Table 1.3: Distribution of academic Staff involved with the study programme

Year	2015	2016	2017	2018	2019	2020
Professor	0	0	0	0	0	0
Senior Lecturer – Grade I	3	4	4	4	4	6
Senior Lecturer – Grade II	3	2	3	3	3	1
Lecturer	1	1	1	1	1	1
Lecturer (Probationary)	1	1	1	2	2	2
Lecturer (Temporary)	0	0	0	0	0	0
Assistant Lecturer	2	2	2	2	2	2

Demonstrator (Temporary)	8	8	8	8	8	8
Technical Officer	1	1	1	1	1	1
Laboratory Attendant	0	0	0	1	1	1

The qualification profile of the academic staff attached to the Department of Computer Science is summarized in Table 1.4.

Table 1.4: Qualification Profile of academic staff in the Department of Computer Science

Staff Category	No.	PhD	MSc/MPhil	PhD (Reading)	MSc/MPhil (Reading)	BSc (Hons)
Professors	02	02	-	-	-	-
Senior-Lecturers	07	06	01	-	-	-
Lecturers	01	01	-	-	-	-
Lecturers-(Probationary)	03	-	-	02	-	01

Most of the academic staff are highly qualified and experienced. However, the Department experiences in staff shortages both in academic and non-academic categories. Moreover, the current approved cadre is substantially less than the entitled numbers derived from the cadre norms.

Section 2: Observations of the Self-Evaluation Report

The Self-Evolution Report (SER) of the BSc (Honours) in Computer Science study programme was compiled by the DCS in accordance with the guidelines prescribed by the *Manual for Review Study Programmes of Sri Lankan Universities and Higher Education Institutions (2015)* of the Quality Assurance Council of the University Grants Commission (SPR Manual of QAC/UGC). In all stages of SER preparation - i.e. gathering evidence, preparing the draft report, and then reviewing, revising, and finalizing the report - the Department has adopted a collaborative and participatory approach. The evidence for each standard under each criterion has been listed using the template prescribed by the SPR Manual.

The Head of the Department (HOD) formed a SER Writing Committee consisting of eight teams to collect and document the extent of internalization of best practices and the degree of achievement in respective standards listed under the respective criterion of the study programme offered by DCS, and to collect and compile the evidence for the listed best practices and respective standards of eight criteria. In addition to this, another team had also been formed to compile that information into a draft SER. Team leaders of the SER writing teams presented their findings at scheduled departmental meetings. Team leaders also drafted summaries for each criterion, which were again discussed in departmental meetings. The SER writing team had adhered to a coding scheme, so the code given for each piece of evidence is self-explanatory and includes the necessary information. The following is the code scheme that had been adopted: Criterion#.Standard#/Serial#:Type of Evidence. The Type of Evidence included a number and variety of evidence that had been arranged sequentially.

The draft of the SER was then compiled and disseminated among senior academic staff for their feedback for further refinement. The final draft of the SER was discussed at the department meeting held on 28 February 2020. The document was then presented to the Coordinator of the Faculty Quality Assurance Cell (F/QAC) and to the Director of the University Centre for Quality Assurance (U/CQA). The Coordinator's and Director's suggestions and comments were incorporated into the final version of the SER prior to its submission to the QAC of the UGC. After obtaining the signatures of the Coordinator of F/QAC, Dean/Science, Director of U/CQA, and Competent Authority of the UoJ, the SER was submitted to the QAC of the UGC on 28/05/2020. According to the SER, a SWOT analysis had also been conducted as part of the preparation of the SER.

The SER submitted by the DCS had also included the description of the actions or steps taken to address the recommendation made by the reports of the previous Subject Review conducted in 2009 (Appendix B). Further, the SER had incorporated all the relevant information about the University, Faculty and the Department of DCS. Section 1: Introduction to the Study Programme listed the Vision and Mission of the DCS, objectives

and graduate profile of the study programme. In addition to these, SER consisted of the details of the different degree programmes offered by the Department, staff profiles, learning resources, and student support facilities.

Section 3: Description of Review Process

The Programmed Review Team (PR Team) was appointed by the QAC/UGC in consultation with the Department of Computer Science, Faculty of Science, University of Jaffna, in accordance with the procedure prescribed by the Programme Review Manual of the QAC/UGC. The PR Team consisted of three senior academics - Prof. Prasad M. Jayaweera (Chair of Review Panel), Prof. Sriyani Wickramasinghe and Dr. M.B.M. Irshad drawn from three universities who have the expertise and relevant training on the process of quality assurance and review.

The QAC/UGC sent soft copies of the SER and the MS Excel template for recording the outcomes of programme review (PR Scoring Sheet) to the reviewers. Each reviewer independently conducted the Desk Evaluation based on the claims made and evidence listed in the SER. After the implementation of the Programme Evaluation Management System for Programme Review by the QAC/UGC, each reviewer entered the respective scores into the system. The PR Team observed that the results of the independent evaluations performed by three reviewers and those evaluations are closely matching.

The Chairman of the PR Team and the Director of Centre of Quality Assurance of the University (U/CQA), in consultation with the Department Head (HoD), scheduled a two-day site visit from November 7th to 9th, 2022. It should be mentioned here that the site visit was delayed due to the COVID 19 pandemic, and the turbulent situation prevailed in the country during the period of 2021/2022. The schedule for site visit was prepared by the HoD of the DCS in consultation with the review chair. Before the site visit, the review team members met online and discussed the results of the desk evaluation in depth and identified the specific clarifications to be made during the site visit. Each member of the PR Team was assigned specific tasks and responsibilities. The PR Team is grateful to the Vice Chancellor, Dean of the Faculty and Head of Department, Director of the U/CQA, Coordinator of the F/QAC and all other academic staff and officers for facilitating the on-site evaluation, and for providing all the necessary information and relevant data. Appreciation is also extended to the entire staff of the DCS for the arrangements made and hospitality extended for the conduct of on-site evaluation.

The site visit began with a meeting with the Vice Chancellor, and the meeting was also attended by the Dean of the Faculty of Science, Director of U/CQA, HoD of DCS, Registrar, and Bursar. The Vice Chancellor gave a brief on the history of the establishment of the University of Jaffna and the Department of Computer Science. He also presented a brief account of the Bachelor of Science (Honours) in Computer Science degree programme, especially its evolution, progress made and the future prospects. Following that, the Director, U/CQA explained the quality assurance policies and procedures that are put in

place in the University.

The next meeting was held with the staff of the DCS. The HoD of the DCS presented an overview of the DCS, the degree programmes offered giving special emphasis on the on study programme under the current review, staff profile, and student enrollment and graduation statistics. The PR Team also had meetings with the SER writing team, academic staff of the DCS, senior academic advisors, non- academic staff of the Department, senior administrative office of the Student Welfare Division, Senior Student Counsellor, and Director of the Gender Equality and Equity (CGEE). The PR Team was impressed by the efforts made by the University towards the development of the University, Faculty, and the Department and to promote cohesion and harmony among diverse student communities and gender equality and equity.

The PR Team also had a meeting with students representing all levels of the study programme. Prior to the site visit, the Chair of the PR Team ensured the availability of the students for their academic sessions at the Department. Accordingly, the date for the site visit was fixed and during the site visit, students were at the faculty, and they had just started their new semester of their respective academic programmes. During the discussion with the students, they were encouraged to discuss their learning experience and any issues faced by them and to offer suggestions to address the issues and make suggestions for further improvements. Further, the review team visited lecture halls and laboratories and observed instructional sessions and laboratory classes.

The PR Team also visited the Library, English Language Teaching Department (ELTD), University Medical Center, and Physical Education Department and made observation on the facilities and services provided by these units. Observations and the information provided by the respective officers-in-charge of all these facilities demonstrated their commitment and dedication to improving the leaner support services and social well-being of the students. The PR Team noted that the lecture halls, laboratories, and study spaces were well-kept. In addition, the PR Team had discussions online with the key members of the Alumni, industry mentors, and other external stakeholders and gathered their views on the degree programme offered and the quality of graduates produced.

Prior to the site visit, the DCS uploaded all documentary evidence to Program Review MIS. However, perhaps due to their tight schedule of the Department, there was a delay in uploading some documentary evidence into the online platform prior to the site visit. However, the reviewers were able to examine the evidence briefly prior to the site visit. During the site visit too, the review team was able to examine a few documentary evidences and the DCS was also very supportive in making available all documentary evidences.

Overall, the PR Team was extremely pleased with the arrangements made to facilitate the review visit and very appreciative of the arrangements made and logistical support provided.

Section 4: Department's Approach to Quality and Standards

The University of Jaffna together with all its faculties has made significant progress in establishing a quality assurance system and institutionalizing the quality culture within the University. The PR Team observed a positive attitude of all categories workforce towards quality assurance and management. The university has established a university-level entity called Centre for Quality Assurance (U/CQA) and a network of entities at the faculty level called Quality Assurance Cells (F/FQCs) to spearhead and coordinate the quality assurance and management activities within the university and respective faculties. The U/CQA is led by a director who is a well-experienced and qualified academic of the University and the F/QACs are led by coordinators who are usually drawn from the senior staff categories. Both the U/CQA and F/QACs are governed and managed according to the university-approved by laws and guided by a Quality Assurance Policy adopted by the University. The Faculty of Science has appointed a coordinator to the F/QAC to liaise with the U/CQA and coordinate the quality assurance activities within the faculty. The Vice-Chancellor and the Dean of the Faculty of Science provide their support, guidance, and encouragement for quality assurance activities. The commitment of the higher authorities of the University towards quality management is commendable.

The curriculum of the study programme complies with the guidelines and requirements prescribed by the Sri Lanka Qualification Framework (SLQF), and also its contents align closely with the relevant Subject Benchmark Statement. The DCS has also adopted well-established procedures for quality assurance in compliance with the ISO policy as well.

Section 5: Judgment on each of the Criteria

5.1 Criterion 1: Programme Management

Strengths

- The organizational structures put in place by the Faculty and DCS are adequate for its effective governance, management, and execution of all administrative and academic activities.
- Adoption of ICT-enabled solutions in many operational and functional areas inclusive of Student Registrations, Examinations, Library, and teaching-learning through online platforms.
- The department maintains an up-to-date and informative Website inclusive of links to specific domains – such as Alumni, ongoing externally- funded projects, outreach activities conducted, TechTalks, etc.
- Some initiatives have been for establishing facilities to cater for students with special needs or differently abled students.

Weaknesses

- Few shortcomings in academic programme management.
- Sub-optimal level of institutionalization of some of the university-level policies and guidelines – such as policy on gender equity and equality, policy on provision of support for students with special needs and respective guidelines.
- Inadequacies of the MIS system put in place for managing and storing key administrative data.
- Sub-optimal level of adoption of occupational safety measures.
- Inadequate compliance and alignment with the relevant goals of the UGC's Strategic Plan in preparing the University Strategic Plan.

5.2 Criterion 2: Human and Physical Resources

Strengths

- The department is resourced with qualified staff and delivering a quality study programme while operating with a staff number less than the approved and eligible cadre.
- Student-centered and student-friendly attitudes and behaviour displayed by all of its

academic, technical and academic support staff.

- Having adequate infrastructure and learning facilities; the Department is housed in a newly constructed four-story building and resourced with required infrastructure facilities for teaching and learning, including well-equipped and newly built lecture halls and theaters.
- Making it mandatory for all new recruits to the academic staff to undergo the induction programme offered by the Staff Development Centre.
- Academic staff participation in continuing professional development training sessions to update and improve their knowledge and skills in academic development planning, teaching-learning process and assessment methods and also in quality assurance processes and procedures.
- Having an industrial training programme embedded in the curriculum.
- Having a well-functioning Carrier Guidance Unit.
- Having well-functioning links with professional bodies and world of work – i.e. with the Alumina Association, Computer Society and IEEE Student Chapter.
- Making compulsory for undergraduates to complete the English Language training programme offered by the ELTU for graduation.
- Providing indoor and outdoor spaces and facilities with Wi-Fi zones as study areas and meeting places for the students.
- Encouraging students to conduct discussion forums within the DCS premises.

Weaknesses

- Sub-optimal level of academic staff research output; most of the research communications are published in university and local journals.
- Having a cadre of academic staff less than the number allowed as per the UGC cadre norms and a sub-optimal level of compliance by the academic staff with prescribed codes of practice.
- Sub-optimal level of compliance with the prescribed occupational safety measures.
- Inadequacies of academic staff competencies in the adoption and application of OBE-SCL approach in programme design and development, delivery and assessments.

5.3 Criterion 3: Programme Design and Development

Strengths

- Adopting prescribed procedures for programme design and development; the process has been initiated by describing well-defined graduate profile and programme learning outcomes in consistent with the university's vision and mission

and local and global industry needs

- Programme design and development has complied with SLQF guidelines and specific SBS and adopted the OBE-SCL approach. Further, the programme design and development has also given due consideration to other relevant guidelines prescribed by professional societies/associations – such as ACM and IEEE guidelines.
- Study programme curriculum is outcome-driven and aims to equip students with knowledge, skills and attitudes (to some extent) to succeed in the world of work and engage in lifelong learning
- Study programme curriculum was developed collaboratively in a participatory manner through a Curriculum Development Committee, and it was further scrutinized by the U/CQA, and approved by the Senate and Council.
- Adopting the University approved Policy on Curriculum Development, Approval, Monitoring and Monitoring and Review.
- Providing a fallback option for students thus allowing students to opt for leaving the honours study programme at the end of the third year with a SLQF 5 level degree qualification.
- Encouraging and providing opportunities to students to engage in a variety of learning activities (i.e. industrial training, industry visits, student research and dissertations, etc.).

Weaknesses

- Lack of full compliance with SLQF guidelines in naming the five (5) degree qualifications offered by the DCS: for direct intake - BSc in Computer Science and BSc (Hons) in Computer Science and for physical science stream - BSc in Physical Science, BSc (Hons) in Computer Science and BSc (Hons) Applied Science in Computing study programmes offered by the DCS.
- Inadequate alignment of programme ILOs with external reference points such as SLQF and SBS.
- Inadequacies noted in programme specifications, and it appears that these inadequacies are due to deficiencies in the prescribed template adopted.
- Limited flexibility offered to students in choosing courses/modules.
- Inadequacies of template of the Students' Transcripts; repeat attempts are not shown in the transcript.
- Absence of evidence on the consideration given for student feedback in revising the study programme curriculum and delivery.
- Inadequate emphasis given for adopting student-centered learning in course/module delivery process.

5.4 Criterion 4: Course/Module Design and Development

Strengths

- Adopting the participatory approach in course design and development thus involving all internal and external subject-matter experts in the curriculum design and development process.
- The courses/modules have been designed and developed in compliance with the specifications and guidelines prescribed by the Sri Lanka Qualification Framework (SLQF), and also in alignment with ACM and IEEE guidelines.
- The university-approved standard formats, templates, and guidelines are adopted in the design and development phases of courses/modules.
- The course/module curricula reflect the current knowledge and emerging trends in the respective fields of study or subject areas, and they are designed to meet the programme objectives and outcomes.
- Having well-trained academic staff involved in the instructional design and development process who have been trained for such purposes.
- Adoption of OBE-SCL approach and appropriate instructional and assessment strategies while designing the bulk of courses.
- The faculty adhering to the correct evaluation of the course/module after the semester to examine the relevance and content of assessments, the efficacy of instruction, the measurement of student learning outcomes, and feedback

Weaknesses

- Inadequacies noted in the alignment of course/module ILOs with Programme ILOs.
- Inadequacy of consideration given for the inclusion of student-centered teaching-learning strategies that enable students to actively get involved in self-learning by adopting diverse learning methods.
- Lack of evidence found on the consideration given in the course/module design and development phase for catering for students with disabilities.
- Failure to update the recommended readings prescribed for several course/module units.

5.5 Criterion 5: Teaching and Learning

Strengths

- Teachers incorporate suitable research outcomes into instructional sessions – from their own or others' research and current research information found in the public domain.

- Teachers encourage students to study independently and collaboratively in relevant contexts, and with the use of technology.
- Teachers adopt multiple teaching–learning strategies, such as making it compulsory for students to engage in study groups, which is one tactic that encourages cooperative learning.
- Teachers encourage students to engage in research, creative endeavors, and knowledge discovery to connect theory and practice relevant to their programmes.
- Students are involved in research as part of the teaching and learning process, and teachers assist and encourage them to publish their findings while rewarding them with proper credit.
- Teachers use the proper instruments to regularly solicit feedback from peers and students on the quality and efficacy of their instruction as a coordinated method for improving the teaching and learning process.
- Teachers use the data collected from student assessments to enhance the teaching-learning process.
- The curricula requirements and teaching and learning strategies used in the study programmes are in line with the Faculty's and University's mission, goals, and values.
- The faculty provides the academic calendar, course prerequisites, and programme schedule at the start of the study programme.
- Based on the data provided for a small number of courses /modules, teachers appear to use blended learning approach (i.e. use of case studies, group projects, presentations, industrial training, workshops, training/research projects, etc.).
- Teachers maximize each student's personal and professional development by engaging themselves with students as learning partners and fostering investigative approaches motivated by curiosity. They use real-world scenarios to ensure that students comprehend how knowledge is applied.
- Teachers encourage students to conduct research as part of a teaching-learning process and assist students with publishing their findings.
- The faculty has adopted ICT-enabled teaching and learning techniques and tools in study programme delivery.
- Teachers employ both teacher-directed and student-centered methodologies, in which students actively engage in and interact with the content and activities (active learning), with the teacher serving primarily as a facilitator.
- The computer labs are equipped with the necessary hardware, software, and human resources required for effective teaching, learning, and assessments.
- The DCS encourages its academic staff members to pursue their higher studies in overseas universities. Some of them have received placements in reputable overseas universities.

Weaknesses:

- Lack of reflection by teachers on the teaching-learning processes adopted – in terms of constructive alignment in terms of teaching-learning methodologies, assessments, and outcomes.
- The DCS's heavy reliance on the less experienced junior lecturers in the study programme delivery.
- Lack of evidence found concerning the systematic analysis of peer review reports by the authorities and the adoption of recommended corrective measures that are required to improve the teaching-learning process.
- Inadequate evidence on the monitoring of programme-level implementation of the teaching-learning framework.
- Lack of evidence on the adoption of gender equity and equality policies and processes.
- Inadequate evidence on the outcomes of the performance appraisal and reward system that is in place for academic staff.

5.6 Criterion 6: Learning Environment, Student Support and Progression

Strengths

- Availability of adequate infrastructure (lecture halls, laboratories, library, study areas, etc. labs, etc.) for the smooth delivery of the study programme.
- Having effective student mentoring, student counselling and related welfare services.
- Offering very comprehensive induction programme to new enrollments and providing all required information regarding the University and Faculty, institutional rules and regulations, facilities and support services provided, briefs on the study programme and teaching-learning approach as well as Students Code of Conduct.
- Providing required information on the study programme and allied matters through the Students Handbook and Study Programme Prospectus.
- Adopting students' progress management system.
- Maintaining an up-to-date and informative Web Site
- Conducting regular need analysis surveys and use of need analysis outcomes in strengthening the support services offered to students.
- Establishing and maintaining industry linkages and utilizing such linkages to seek opportunities for the students' industrial training programmes.
- Enforcement of Disciplinary By-laws in fostering discipline within the student community.

Weaknesses:

- A few shortcomings of DCS' Web portal services – further improvements are required particularly the section of FAQs and Help Desk.
- Absence of evidence on facilities and services provided for differently abled students.
- Sub-optimal level of contribution by the library with respect to- library collection, services and their quality.

5.7 Criterion 7: Student Assessment and Awards

Strengths

- A variety of assessment strategies are used in assessing student knowledge and skills; assessment strategies along with the weightage relating to different components of assessments are specified in the Students Handbook.
- Assessment strategies have been appropriately revised periodically based on the feedback received and the expectations of the DCS.
- Use of assessment Rubrics in evaluating students' assessments.
- Release of examination results on time.
- The name of the degree, graduation requirements and the degree awarded comply with the SLFQ guidelines.
- Availability of updated Examination By-laws and Regulations.
- Holding Pre-results and Results Boards on time as scheduled.
- The procedure for handling examination offences, including the punishments imposed, has been duly conveyed to the students through the Students Handbook and Web site.

Weaknesses:

- Absence of evidence on alignment of assessment strategies and methods with the level descriptors of specified qualifications.
- Absence of evidence to show the availability and use of the reports from external examiners by the Pre-Results Board in finalizing the results.
- Sub-optimal level of participation of external examiners in the examination process.

5.8 Criterion 8: Innovative and Healthy Practices

Strengths

- The faculty has put in place the institutional mechanisms and structures for coordination and facilitation for the purpose of stimulating research and innovation and

developing community and industry linkages.

- The initiatives taken to promote and foster the academic staff and student involvement in extracurricular pursuits in social, cultural, and artistic endeavours.
- Use of variety of teaching-learning strategies - academic staff and students are encouraged to use a variety of ICT-based teaching and learning modalities such as VLE, Google Class, and LMS.
- Inclusion of the industrial training component into the curriculum of the study programme and implementing it successfully.
- Provision of several preparatory courses in ELTSL during the orientation programme offered for new students to facilitate their preparedness to pursue higher learning in English medium.
- Promotion of student participation in regional and national-level contests (such as those in IQ, innovation, coding competition, sports, general knowledge, etc.) and fostering them to compete well and earn honours as top finishers.
- Initiatives taken by the Faculty and DCS to engage in income-generating activities, particularly by offering postgraduate study programmes and courses.

Weaknesses

- Inadequate evidence on the implementation of performance appraisal and reward system to motivate academics to seek excellence in their research and outreach endeavours.
- Absence of evidence on the availability of appraisal and reward system for students to promote and foster students' creativity and innovations.
- Absence of evidence on the encouragement given to academics and students to adopt and use ICT-based modern teaching-learning tools including the use of OER resources.
- Absence of evidence and information on the preparation and adoption of HR succession plans.
- Absence of evidence on appraisal and reward system for executive and non-academic staff categories.
- Absence of evidence on the academic staff's engagement in collaborative research projects through inter-institutional partnerships.
- Lack of funding support for student projects and discoveries.

Section 6: Grading of Overall Performance

Table 6.1: Assessment Criteria and Score

No.	Criterion	Weighted minimum score*	Actual criterion-wise score
1	Programme Management	75	124
2	Human and Physical Resources	50	82
3	Programme Design and Development	75	118
4	Course / Module Design and Development	75	117
5	Teaching and Learning	75	124
6	Learning Environment, Student Support and Progression	50	73
7	Student Assessment and Awards	75	124
8	Innovative and Healthy Practices	25	40
	Total score (out of 1000)		802
	Total score (out of 100)		80.2
	Grade Awarded	**A**	
	Performance Descriptor	***Very Good***	
	Interpretation of Performance Descriptor	***High level of accomplishment of quality expected of a programme of study; should move towards excellence***	

The overall performance of the Bachelor of Science (Honours) in Computer Science degree programme in internalizing best practices and attaining the prescribed standards was reviewed using the prescribed eight criteria and 156 standards. All criteria have secured more than the minimum weighted score requirement. The total average score for all eight criteria is above **80.2%**, thus securing the Grade "A" with a performance descriptor of 'Very Good' which is interpreted as '*High level of accomplishment of quality expected of a programme of study; should move towards excellence'*.

Section 7: Commendations and Recommendations

The PR Team identified several commendable aspects of the B.Sc. (Honours) in Computer Science study programme conducted by the Department of Computer Science, Faculty of Science, University of Jaffna. It also identified some aspects of the programme where there is room for further improvement. The review team thus has made some recommendations for further enhancement of the quality and standards of the study programme, expecting that those recommendations would be considered as peer suggestions for further improvement towards excellence.

7.1 Commendations

- Efficient functioning of governance and management of administrative, academic and learner support service processes.
- Efforts taken and progress made in automating the service functions.
- Availability of excellent physical infrastructure and learning resources.
- High level of commitment and dedication of all categories of staff.
- High level of participation Alumni in the process of progressive improvement of the functions of the DCS and its facilities.
- Adopting a curriculum for the study programme that is at an acceptable level of alignment with national and global curriculum guidelines and standards.
- Establishing the Centre for Gender Equity and Equality and adopting the GEE policy.
- Provision of a quality ELTSL programme.
- Providing dedicated study and recreational areas and facilities for students.
- Establishing and maintaining industry linkages and using those as a platform to provide industrial training, industry visits, and other joined endeavors.
- Academic staff engagement in research and development and dissemination.

7.2 Recommendations

- Pursue the effort to adhere with all guidelines referenced in "Academic Procedures Handbook" and also with what is recommended in the Part III: Governance and Management of National Universities.
- Pursue integration and standardization of ICT adoptions in line with the Comm. Circular 02/2013 : IT Governance and Management (IT Policy).
- Pursue further alignments with local and global standards such as those prescribed by "Occupant Safety And Health" of WBDG and with the National Occupational Safety Policy.

- Consider further diversification and strengthening of academic expertise available for the design and development, teaching-learning and assessments of the academic study programme by obtaining the additional cadre positions as per the numbers allowed based on staff: student ratio (e.g. Cadre Norms).
- Foster greater compliance by all categories of staff with ethics and accountability.
- Pursue greater integration of research and innovations into the teaching-learning process where appropriate.
- Consider promoting greater involvement of external examiners to enhance the accuracy and transparency of the examination process.
- Consider broadening and strengthening the role and functions of the Faculty Quality Assurance Cell. Assign the responsibility of handling all matters relating to conducting the students' feedback and satisfactory surveys and submitting analyzed information to the relevant instructor/s through the respective HoDs.
- Consider strengthening the facilities provided for administration and study programme delivery and give due consideration to the guidelines and norms prescribed for Types of Spaces as recommended by WBDG as well as the Occupational Safety Policy.
- Encourage the academic staff to take steps to increase the quality and standards of research output, particularly by publishing in international and local peer-reviewed journals.
- Consider further enhancing the relevance, quality and standards of the study programme by adopting the adequate coverage of cutting-edge technologies and the use of state-of-the-art software.
- Consider providing continuous professional development programmes for the academic staff to enhance their competencies in the adoption and application of OBE-SCL approach in the design and development and delivery of programme and courses/modules.
- Consider promoting greater interaction between academic staff and library staff to ensure the use of the library and information resources in the learning process.
- Consider establishing collaborative partnerships with local and international universities to facilitate student and staff exchange programmes and research partnerships.
- Consider expanding the engagement in income-generating activities by expanding the outreach programme - through offering short courses and engaging in consultancy work.
- Consider paying more attention to the adoption of an inclusive policy on special needs students in study programme design and development and delivery.
- Consider implementing a regular monitoring system on the implementation of the delivery of the study programme – i.e. teaching-learning, and assessment process-

to check the appropriateness of the teaching-learning and assessment methods adopted.

- Encourage young academic staff to acquire the required postgraduate qualifications in assigned fields and grow in their assigned specialties as quickly as possible so as to enhance the quality of teaching-learning programmes.
- Consider streamlining the peer review of teachers and student feedback evaluation processes; the reports of the systematic analyses of peer reviews and students' feed- back must be given to the relevant academic members on time so that they can adopt appropriate corrective measures.
- Consider strengthening the performance appraisal and reward system for all categories of staff – academic, executive and non-academic staff categories so as to improve their performances and work outputs (including the introduction of performance appraisal system for those categories which are not currently assessed).
- Consider giving more attention to institutionalizing gender equity and equality policies and processes.

Section 8: Summary

The Department of Computer Science (DCS) of the Faculty of Science in University of Jaffna (UoJ) was established in early 1991. At first, it commenced offering Computer Science as a subject for the students reading in the Physical Science stream and then catering for the BSc (honours) in the Computer Science degree programme. In 2007, the DCS commenced a study programme named, BSc in Computer Science which is presently renamed as BSc (Hons) degree in Computer Science for students who are directly admitted by the UGC under a special window (i.e., Direct-intake stream). In 2015, it commenced offering an extended fourth year leading to a BSc in Applied Science degree in Computing for the students in the physical science stream who fail to get into the honours degree pathway leading to a BSc honours degree in computer science.

The Review Team assigned by the OAC of the UGC performed a comprehensive review of the BSc (Honours) in Computer Science by conducting a desk evaluation of the SER and a site visit for physical verification of the claims made and evidence provided with respect to the prescribed best practices and standards by the SPR Manual of the QAC/UGC.

The Review Team observed ample evidence on the existence of properly institutionalized quality assurance system pertaining to prescribed standards of eight criteria - programme management, human and physical resources, programme design and development, course design and development, teaching and learning, learning environment and learner support, student assessment and awards, and healthy and innovative practices. The Review Team is highly satisfied with the DCS's commitment to continuous improvement of all aspects of the study programme. However, a few shortcomings were identified during the review and relevant recommendations for further improvement are prescribed in Section 7.

Based on the recommended scoring system, the B.Sc. (Honors) in Computer Science study programme has earned an overall score of 80.2% and secured the Grade of "A" which is interpreted as '*High level of accomplishment of quality expected of a programme of study; should move towards excellence'.*

The Review Team wishes to congratulate all the staff of the Department of Computer Science for their commitment to maintaining high quality and standards in the study programme. The PR Team acknowledges the excellent support and facilitation provided throughout the review process by the University and Faculty, and the members of the review team wish to extend their appreciation to the Vice Chancellor of the University of Jaffna, Dean of the Faculty of Science, the Head of the Department of Computer Science and all the staff for their cordiality and hospitality extended.

Annexure: Site Visit Schedule

Date	Time	Activity
Day 1	08.30 - 08.45 a.m.	Welcome the Reviewers
	08.45 - 09.15 a.m.	Meeting with Vice Chancellor
	09.15 - 09.45 a.m.	Meeting with CQA Director
	09.45 - 10.30 a.m.	Meeting with Dean of Faculty of Science
	10.30 - 10.45 a.m.	Tea
	10.45 - 11.15 a.m.	Meeting with members of the SER writing team.
	11.15 - 12.00 noon	Meeting with the Academic staff of the department (excluding HoD)
	12.00 - 12.30 p.m.	Meeting with the Senior Academic Advisors
	12.30 - 01.00 p.m.	Meeting with the Non-Academic staff of the department
	01.00- 02.00 p.m.	Lunch
	02.00 - 02.30 p.m.	Meeting with the English Language Teaching Department (DELT) staff
	02.30 - 03.30 p.m.	Observing facilities relevant to the degree progra.m.me
	03.30 - 03.45 p.m.	Tea
	03.45 - 04.45 p.m.	Meeting of the review panel
Day 2	08.30 - 09.00 a.m.	Observation visits to Library
	09.00 - 09.30 a.m.	Meeting with SAR Welfare division/ Senior student counsellor
	09.30 - 10.00 a.m.	Observation visits to Medical Center
	10.00 - 10.30 a.m.	Observation visits to Physical Education Department
	10.30 - 10.45 a.m.	Tea
	10.45 - 11.15 a.m.	Meeting with External Stakeholders (Online)
	11.15 - 11.45 a.m.	Meeting with Alumni Members (Online)
	11.45 - 12.15 a.m.	Meeting with Mentors (Online)
	12.15 - 01.00 p.m.	Meeting with the students of the department
	01.00 - 02.00 p.m.	Lunch
	02.00 - 03.00 p.m.	Discussion among the review team. members
	03.00 - 03.30 p.m.	Wrap-up Meeting
	03.30 p.m.	Tea & Conclusion