Programme Review Report

Bachelor of Technology in Science and Technology
&
Bachelor of Science in Mineral Resources and Technology
Faculty of Applied Sciences
Uva Wellassa University of Sri Lanka

Site Visit Dates: 16th-17th June 2022



Review Panel: Prof. Saman Abeysinghe (Chair)
Prof. RGSC Rajapakse
Prof. (Mrs.) Prasanthi Perera
Prof. (Mrs.) SK Gunathilake

The Quality Assurance Council
University Grants Commission, Sri Lanka

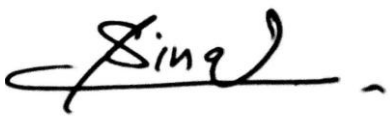
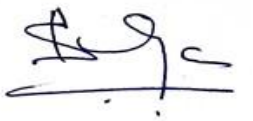
University : Uva Wellassa University of Sri Lanka

Faculty : Faculty of Applied Sciences

Programmes : Bachelor of Technology in Science and Technology

Bachelor of Science in Mineral Resources and Technology

Review Panel

Name	Signature
Prof. Saman Abeysinghe University of Ruhuna – Chair	
Prof. RGSC Rajapakse	
Prof. (Mrs.) Prasanthi Perera	
Prof. (Mrs.) SK Gunathilake	

Date: 28.06.2022

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Section 1: Brief Introduction to the Study Programme Cluster

The Uva Wellassa University of Sri Lanka (UWUSL) was established in 2006 and currently it comprises four faculties namely; the Faculty of Applied Sciences, Faculty of Animal Science and Export Agriculture, Faculty of Management and Faculty of Technological Studies. The Faculty of Applied Sciences (FoAS) at its inception had two departments, and currently it comprises three departments, namely; the Department of Science & Technology, Department of Computer Science and Informatics and Department of Applied Earth Sciences.

The two degree programmes which are subjects of this external review, namely the Bachelor of Technology in Science and Technology – BTech (ScienceTech) and Bachelor of Science in Mineral Resources and Technology – BSc (MRT) are offered by the Department of Science and Technology (DoST). Students qualified in GCE (A/L) examination in both biological science and physical science streams are allowed to apply for both degree programmes, and the students are selected through two separate windows and 60 students are admitted per window per year.

The BTeach (ScienceTech) and BSc (MRT) study programmes commenced in 2006, and the first curricula revision was taken place in 2015. It appears that this revision has been done in compliance with the Sri Lanka Qualification Framework (SLQF) guidelines and standards adopting the Outcome-based Education (OBE) and Student-centred Learning (SCL) principles and approaches while giving due consideration to the feedback received on the previous curricula and the suggestions and recommendations made therein. In par with the Vision and Mission of the University, the curricula are designed with the focus on "value addition" to national resources while taking into consideration of current demands and trends in the industry and job market of the country. Study programmes comprise two phases; common/general programme and specialization programme. First two years of both study programmes offer common subjects focussing on imparting basic and essential knowledge and skills required to proceed for specialization. The specialization component of the study programmes commences in the third year and continues over the fourth year. Third and fourth year courses of the study programmes are focused on chosen specializations. The second semester of the fourth year is allocated for student research projects and industrial placement with the volume of learning equivalent to 6 and 4 credits, respectively. Admission into specialization streams is determined through a competitive selection process. In the specialization options, the BTech (ScienceTec) study programme offers three specializations namely; Food Engineering and Bioprocess Technology, Material Science and Mechatronics and in the BSc (MRT) study programme, there are two specialization streams, namely; Mineral Processing Technology and Water Science and Technology.

Table 1.1. Students enrolled to the two study programmes during last five years.

Academic Year	BTech (Science Tec)	BSc (MRT)	Total
2017/18	49	47	96
2016/17	54	46	100
2015/16	34	38	72
2014/15	54	48	102
2013/14	43	52	95
Total	**234**	**231**	**465**

The staff of the DoST consists of 33 permanent academic staff members including two professors, 17 senior lecturers, and 20 of them have PhDs and others with M.Phil. or MSc level-qualifications. There are 05 temporary lecturers and 13 demonstrators. Four technical staff members and 10 junior level academic support staff members are also available. Academic staff members are qualified in diverse specializations required to cater for diverse sub-specializations

The DoST strives to provide its students with unique opportunities for academic, professional and personal development. It adopts technology-driven approach to design, develop, deliver and assess each course unit, and the programmes are delivered through blended mode, relying heavily on Learning Management System (LMS), which is a software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programmes, materials or learning and development programmes. Students are provided with a conducive learning environment consisting of well-equipped lecture halls, laboratories, computer centre, library, etc., and other common amenities of reasonably good standards. Moreover, the students are guided and supported through academic counselling and mentoring, and career guidance services.

In general, the DoST through its study programmes endeavours to turn out intellectually, critically, analytically and professionally sound graduates who could compete and thrive in the competitive job market. Further, it strives towards improvement in its academic standards, research outputs and industry collaborations and partnerships. Moreover, the curricula of study programmes have been regularly monitored, assessed and updated to keep them up-to-date to meet the changing requirements of the industry and also to satisfy the needs of major stakeholders.

During the review process, the Review Team has observed the following strengths and weaknesses of the DoST and its study programmes:

Strengths	Weaknesses
• Academically and professionally qualified staff. • Diversity in specialization of the academic staff. • Networking with professional bodies, industry partners and academia. • Diverse specialization streams offered by two study programmes. • Blended teaching-learning mode facilitated by the LMS, Library, well equipped training workshops, research labs equipped with high-tech equipment and sophisticated computer laboratory. • Curricula of both study programmes includes compulsory student research project and industrial placement module. • Adoption of novel technology-based teaching and learning strategies and practices. • Access to Internet via Wi-Fi facilities provided in dedicated zones covering the university premises. • Availability of institutional support for funding for research and investment. • Students are selected through separate windows of admission. • Networking and establishing contacts with alumni and outside stakeholders. • Absence of boundaries between faculties and common teaching facilities. • Healthy interactions among all stakeholders within the University. • Green and clean environment prevailing within the University.	• Absence of evidence having clearly defined TORs for standing and ad-hoc committees. • Nonexistence of Department's Annual Action Plan prepared in line with the Faction Annnual Actions Plans, and hence absence of framework for monitoring annual activities of the Departtment. • Limitation of the residential facilities provided for the academic staff. • Absence of evidences on existence of duty list and work norms for the staff. • Failure to use external examiners and external moderators to ensure fairness and validly of examination process. • Lack of clarity on second marking of examination answer scripts. • Offering both the student research project and industrial placement in the 2nd semester in the fourth year thus overburdening students in the last semester of the study programme. • Offering Industrial Placement as a non-GPA module. • Lack of clarity in the process of conducing Formative Assessments. • Lack of clarity of layout of study programme curricula. • Very limited involvement in income generating activities. • Lack of some important information in the curricula of some course units. • Lack of a common standard formats for recording the examination marks. • Nonexistence of University Examination Manual. • Lack of a clear mechanism for handling students' grievances.

Section 2: Review Team's Observation on the Self-evaluation Report

The FoAS decided to apply for the study programme review (SPR) for its study programmes by under cluster basis and the decision was conveyed to the Chairman, UGC on October 30, 2019 by the Dean of the FoAS. The Faculty Board of FoAS at its 108th meeting appointed Dr. A.P. Henagamage as the Chairman of the SER Preparation Team for Cluster 1 consisting two study programmes – BTech (ScenceTech) and BSc (MRT) study programmes. Eight sub-committees, one for each of the 8 study programme review criteria with representatives from academic, administrative, academic support, non-academic staff members were appointed on December 20, 2019 with the covering approval of the Faculty Board which was later ratified at the 111th meeting of the Faculty Board of FoAS.

The SER was prepared according to the guidelines prescribed by the "*Manual for Review of Undergraduate Study Programmes of Sri Lankan Universities and Higher Education Institutions*" (2015; SPR Manual). Staff members were provided with awareness sessions conducted through a series of workshops organized by Quality Assurance Cell the Faculty (F/QAC) with the coordination of CQA of the University (U/QAC) to familiarize the SER writing team with the SPR Manual, study programme review process and SER compilation.

The SER writing team appears to have adopted participatory approach in SER compilation. Each team had a series of participatory sessions with respect to best practices and standards prescribed under the assigned criterion, claims on compliance with best practices and the degree of attainment of the standards together with relevant evidences, collection and collation of evidences and review of evidence, and finally on the compilation of the draft report on the assigned criterion. The draft composite report was compiled by the Chairman of the SER Preparation Team for BTech (ScienceTec) and BSc (MRT) study programmes. The draft SER was subject to further scrutiny through a series of discussions with the participation of all members of SER drafting team and final editing was done by an editorial board.

Section 3: Description of the Review Process

The FoAS of UWU applied for review of its study programmes on cluster basis. The Cluster 1 includes the two-degree programmes: Bachelor of Technology in Science and Technology – BTech (ScienceTec) and Bachelor of Science in Mineral Resources and Technology - BSc (MRT). The UGC in agreement with the FoAS commissioned a Review Team and fixed a time schedule for the review.

The UGC appointed the following Review Team consisting of four members based on their expertise:

1. Prof. Saman Abeysinghe, University of Ruhuna - Chair
2. Prof. SK Gunathilake, Sabaragamuwa University of Sri Lanka - Member
3. Prof. Prasanthi Perera, Wayamba University of Sri Lanka - Member
4. Prof. RGSC Rajapakse, University of Peradeniya - Member

The soft copies of the SER of the Cluster 1 programmes were made available to the Review Team. Review Team conducted the desk evaluation individually based on the information provided in the SER. The completed templates of the individual desk evaluations were sent to QAC/UGC. Subsequently, the team members met via an online platform and discussed the results of the desk evaluation reports. After uploading the supporting documents to the portal created by the University, the review team completed the 'evaluation proper '". Having completed this task, the Review Team divided the eight criteria of the Study Programme Review Report (SPRR) among its members in order to execute the review efficiently and effectively. In addition, the Review Team discussed the score cards prepared by respective members of the review panel, and the overall performance of the programmes study as judged by the information provided in the SER. After the desk evaluation, the Review Team identified and prepared a checklist for the site visit – a list of stakeholders that they wish to meet, the places to visit and events/activities to be observed, and the clarifications to be made on evidence listed.

The Review Team conducted the 2-day site visit during the period of 16th and 17th June 2022. Review Team arrived at Badulla on 15th June and stayed at Heritage Resort, No.205 Keppetipola Rd, Badulla.

Day 1:

On the 1st day, at 8.00 am on 16th June, the Review Team arrived at the Boardroom of the FoAS of UWU. Review Team was welcomed by the Dean of FoAS and the Chairman of SER Writing Committee, and given a briefing on the arrangements made for the review, and provided the schedule for the entire period of 16th June to 17th June 2022. This was followed by a meeting with the Vice Chancellor of UWU at his office in the presence of the Dean, FoAS and the two Heads of Departments of the FoAS and the Director, Quality Assurance Cell of the University (U/QAC). The Vice Chancellor briefed the Review Team on the institutional mechanism that has been put in place for enhancing and maintaining the quality and standards of the university governance and management and academic study programmes it offers. This briefing was followed by a narrative given by the Director, U/QAC providing further details of the quality assurance process in place. Thereafter, the Review Team proceeded to have a discussion with the Dean and the academic staff of the FoAS at the Boardroom of the Faculty, and the Dean, FoAS provided a detailed description on internal quality assurance process that is in place at the Faculty and quality enhancement activities that have been carried out.

Following those discussions, the Review Team proceeded to the Office of the F/QAC of the FoAS to scrutinize the evidence documents cited and provided for the claims made with respect to the prescribed best practices and standards of respective SPR criteria. The members of the SER writing team assisted the reviewers in finding out the relevant documents. Thereafter, the Review Team commenced visiting the laboratories (i.e., Biology, Physics and Chemistry, Water Science, Mechatronics, Mineral Resources and Technology, and Instrumentation) and the engineering workshop. As the final event of the first day, the Review Team had a discussion with students and sought their views on quality of academic programme and delivery, learner support services, common amenities and welfare facilities, industrial training programme, student research project, etc., and also on the problems encountered by them.

Day 2:

On the 2nd day, 17th June, the Review Team visited the teaching-training facilities and observed a lecture conducted for the 2nd year students. This was followed by a visit to the newly commissioned Student Centre and observed the facilities provided for the students. Review Team also visited the Career Guidance Unit (CGU), University Medical Centre, student canteens, Student Recreation Centre and Main Library of the University. Following that, the Review Team continued with the document scrutiny at the Office of F/QAC, and then proceeded with a discussion among its members on key findings of the review. As the final event of the review, the Review Team had the wrap-up meeting with the Dean, Heads of the Departments and academic

staff members of the Faculty. The Chair of the Review Team gave a narration on the strengths and weakness of the study programmes as judged by the review findings and the other panel members provided further comments on their findings and observations.

The Review Team wishes to put on record of their appreciation of the arrangements made by the Faculty for the study programme review as well the hospitality extended during the site visit. Further, special thanks are extended to Dr. Amila P. Henagamage, Chairman / SER Preparation Team who had coordinated and facilitated the review visit.

Section 4: Overview of the Faculty's Approach to Quality and Standards

The FoAS has put in place the internal quality assurance mechanism to foster a quality culture in its all mandatory functions. The key element of this approach is the establishment of the Faculty Quality Assurance Cell (F/QAC) which works in liaison with the Centre for Quality Assurance of the University (U/CQA).

The U/CQA was established under the By-Laws of the Quality Assurance Centre coming into operation with effect from 25th August 2017 as per the guidelines prescribed by the UGC Circular in 2015. The Head of U/CQA is the Director who was appointed by the Council on the recommendation of the Vice-Chancellor for a term of three years. The U/CQA Management Committee is chaired by the Vice-Chancellor. The composition of the Committee includes the Deans, Bursar, Librarian and Registrar and QAC Coordinators of respective Faculties. A Senior Assistant Registrar or an Assistant Registrar serves as the Secretary to the Committee. Initiatives have also been taken to enhance the QA activities by incorporating QA-specific goals, objectives, and strategies and activities in the Strategic Plan and annual Action Plans of the University. The goal of establishing the U/CQA is to establish a catalytic centre to lead and guide quality enhancement of all aspects of the University – governance and management, academic programmes, research and innovations and outreach activities. The By-Laws elaborates the functions and responsibilities of the U/CQA, organizational structure, composition of the F/QAC and their functions, responsibilities and reporting procedure. Review Team further observed that the U/CQA together with its network of F/QACs is in the process of developing best practices for most of the university governance and management procedures, academic and allied matters, research and innovations and outreach activities for wider adoption. The Management Committee of U/CQA meets quarterly while the Coordinating Committees of F/QACs meet once in every two months.

The mandate of F/QAC of the FoAS as of the other faculties is to foster a quality culture with in the Faculty that seeks to continuously improve the quality of all academic and allied activities, research and development and outreach activities. The progress of quality enhancement activities is regularly reported to the Faculty Board and to the U/CQA which will then be reported to the Senate. The composition of the Management Committee of the F/QAC consists of representatives nominated by respective Departments, and it is headed by a Coordinator appointed by the Faculty Board. The Dean and HoDs of FoAS and four students from the third year batch, each representing the respective departments attend the Management Committee meetings by invitation. Review Team believes that the efficiency of the quality enhancement activities of the Faculty would further be enhanced by expanding the composition of the

Management Committee of F/QAC to accommodate the Cadre Chair Professors, and if no Cadre Chair Professor, then a Professor nominated by each Department. Further, inclusion of an annual activity plan of the F/QAC in the Faculty Annual Action Plan would also be helpful to foster quality enhancement and management within the Faculty.

The Review Team observed that the main involvement of F/QAC is obtaining student feedback on the courses/modules delivered and conducting peer evaluation of teachers. These two aspects were initially handled by the Heads of Departments (HoDs) of respective departments before establishing the F/QAC in 2017. Continuous practice of obtaining the student feedback and the peers reviews on the effectiveness of course/module delivery and quality of teaching, respectively is commendable. Recently, the F/QAC has taken initiatives for further streamlining of the peer review process. However, the Review Team is of the view that the student feedback questionnaire format could further be expanded to include the questions to seek views of students on assessment strategies and processes adopted as well as the quality of learner support and learning resources provided. Further, it must also be stressed that the outcomes of the student feedback and peer reviews should be utilized appropriately for further improvement of study programme curricula, and delivery and assessments.

The F/QAC also involves in conducting the student satisfaction survey that commenced from 2020. In addition, the Review Team is of the view that the F/QAC can actively get involved more with the curriculum management process. In this regards, the F/QAC could get involved with the Curriculum Development Committee of the Faculty in establishing faculty-level guidelines for future programme/curricula development/revision, and developing and adopting the monitoring mechanism and strategies for evaluating the on-going programmes.

Strength of the human resource of the Faculty is at a satisfactory level with 33 academic staff with two professors, and about 50% the staff is qualified with doctoral level qualifications. It appears that the academic strength of the staff is quite sufficient to enhance and maintain the quality of study programmes except in the specialization areas of Food Engineering and Bioprocess Technology and Mechatronics where shortages of subject experts are noted.

Further, the Review Team is of the view that more determined efforts need to be taken by the University in institutionalizing the quality culture within the University. Foremost importance in this regards is the adoption of key policies and procedures with respect to university governance and management, academic programme management, research and development and outreach activities. Further, it was noted that the UWU is yet to put to put in place the Qualification Framework of the University designed in alignment with the SLQF, the Standard Operating Procedures (SOP) for key activities, and the University Policy for Quality Enhancement and

Management. Though, the most of the curricula of courses and modules of both study programmes appear to have been designed in compliance with the guidelines prescribed by the SLQF, adopting OBE-SCL approach, the academic staff must further be appraised and trained on study programme curricula design and development and delivery and assessment strategies, with particular emphasis on adopting the UGC prescribed guidelines such as SLQF and OB-SCL principles and approaches in order to ensure continuous improvement of quality and standards of academic study programmes. It is also stressed the need for further improvement of course specification by including the matrix of mapping that depicts the constructive alignment of among the programme ILO, course ILO, course contents and teaching and learning, and assessment methods, and such details would certainly strengthen the programme delivery and assessment, and thus improving the quality and standards of study programmes and their outputs.

Section 5: Judgment on the Eight Criteria of Programme Review

Criterion 1: Programme Management

The organizational structure of the FoAS is adequate for effective management and execution of its core functions. Faculty and its Departments adopt management procedures that are in compliance with the nationally prescribed establishment and financial management procedures. The DoST adopts a participatory approach in its governance and management, and it also accommodates student representation as and when required. The Webpage of the Department is constantly kept updated with current information. Faculty together with respective departments, conduct Orientation Programmes for all new entrants. Department securely maintains personal and academic records of all students, accessible only to authorized personnel with provision of secure backups. The Department uses an ICT platform for data management, and it is linked to the University Management Information System (MIS). The Faculty has established a Quality Assurance Cell (F/QAC) with well-defined terms of reference (ToRs). Department has developed the study programme curricula in compliance with SLQF guidelines, and adopting the OBE-SCL principles and approaches. Department conducts regular curricula updates in liaison with the Curriculum Development Committee of the Faculty while giving due consideration to the feedback obtained from students and stakeholders. The strengths and weaknesses of Criterion 1 are as follows;

Strengths

- The organizational structures of the Faculty and Department are adequate for effective management and execution of their core functions.
- The Faculty and Department adopt management procedures that are in compliance with nationally prescribed establishment and financial management procedures.
- A student-friendly academic and technical support system is adopted with adequate human and physical resources including adequate number of full-time staff, technological infrastructure, scientific laboratory facilities, language laboratories, library facilities etc.
- The Department holds staff meetings at regular intervals and the minutes are recoded and maintained.
- Faculty and its departments adopt a participatory approach in its governance and management and accommodate student representation in the meetings of Faculty Board, Management Committee of F/QAC and welfare committees.
- Faculty and the Department closely adhere to annual academic calendar that enable the students to complete the chosen study programmes and graduate at stipulated times.

- Faculty distributes the Student Handbook which provides all the necessary information such as current status of University and Faculty, descriptions of study programmes, learning resources, student support services, Code of Conduct for Students and possible consequences, if non-compliance is observed, and welfare measures to all incoming students during orientation programme.
- Study Programme Prospectus has recently been developed, and it is made available in the Webpage as a soft copy.
- Department maintains an up-to-date Webpage.
- Orientation programmes are conducted by the Faculty together with its Departments for all new incoming students.
- Faculty and Department securely maintain personal and academic records of all students.
- Faculty and Department use an ICT-based applications and tools for all execution of its key functions and maintain an updated database for its key functions that is linked to the Management Information System (MIS) of the University
- University has put in place annual staff appraisal system for most categories of its employees.
- Faculty has established a Quality Assurance Cell (F/QAC) with clearly defined ToRs.
- Faculty together with its departments established a Curriculum Development Committee for monitoring, reviewing and updating of study programme curricula.
- Department has developed the study programme curricula in compliance with SLQF guidelines and adopting OBE and SCL principles and approaches.
- Department has conducted curriculum revision at satisfactory manner while giving due consideration for the feedback obtained from students and stakeholders.
- Employability of graduates is promoted through working in partnership with external stakeholders including the private sector and Alumni.
- Retention, progression, completion/graduation rates, employment rates and per student cost are regularly monitored.
- Department monitors the delivery of curricula through feedback obtained from students.
- Performance of teachers is monitored through peer reviews.
- Department has established few national and international collaborative partnerships for academic and research cooperation that are operationalized through MoUs and agreements.
- Faculty together with its departments offers academic mentoring and counselling services to students.
- University assures that all students have access to adequate health care services.
- University has provided facilities for sports, recreational, religious, cultural and social activities.
- University has put in place adequate safety and security measures to ensure the provision of safe and secure environment for all its stakeholders.

- Faculty and Department follow the approved by-laws pertaining to examinations, examination offences, and student discipline.
- Faculty offers special support to students with special needs with the help of the respective departments.
- Faculty complies with gender equity and equality (GEE) principles and has taken steps to deter any form of sexual and gender-based violence amongst all categories of staff and students.
- University is fully committed to maintain the policy of zero tolerance for all forms of student harassment to ensure safe and pleasant learning environment for all its students.

Weaknesses

- Absence of Department Action Plans.
- Holding common Staff meetings where all the members of the department where the temporary staff and demonstrators are accommodated.
- Absence of Examination Manual for the University.
- Absence of documentary evidence on stakeholder consultations and stakeholder feedback even though the Department conducts discussions with stakeholders regularly.
- Absence of documentary evidence on seeking the feedback of students on the orientation programme offered to them.
- Absence of evidence on the availability for appraisal and reward scheme for non-academic and academic supportive staff.
- Absence of financial assistance/scholarship programmes for students at Department or Faculty levels.
- Absence of evidence on the adoption of prescribed work norms and workloads across all categories of staff.
- Absence of evidence on how stakeholder feedback and student feedbacks are analysed and whether the outcomes of such analyses are considered for further improvement of study programmes and their delivery.
- No evidence for facilitating differently abled students at examinations.

Recommendations

- Expedite the finalization of Annual Action Plans of Department and commence implementation as early as possible together with a monitoring mechanism for review the progress of implementation of Annual Actions Plan of the Faculty (together with Department-level Action Plans) and include a regular agenda item at the Faculty Board Agenda to discuss the progress of implementation of Faculty and Department-level Action Plans.

- Design and implement an appraisal and reward system for those categories where such system does not exist.
- Design and introduce financial assistance/scholarship programme for students based on their merits and needs.
- Take steps to address all of the weaknesses highlighted above.

Criterion 2: Human and Physical Resources

The academic programmes are delivered mostly by a well-qualified staff. However, for certain specializations there is a need for more qualified staff members for the specialization streams of Food Engineering and Process Technology, and Mechatronics. Physical resources are adequate and no inadequacies were noticed. The strengths and weaknesses of the Criterion 2 are as follows;

Strengths

- Well qualified academic staff is available for many specialization subject areas to achieve the set goals and objectives of study programmes (except for the specialization streams of Food Engineering and Process Technology, and Mechatronics). Four Professors, one Associate Professor and 11 Senior Lecturers are serving in the Department. Nineteen PhD holders are in the department having specialized in various fields of studies relevant to the degree programmes while four members are reading for PhDs.
- Staff engagement in research and development and outreach activities and the Faculty has secured a significant number of research grants.
- Collaboration and team work are encouraging features of the Faculty as a whole and of the Department in particular.
- Staff has made a significant number of publications in national and international referred journals.
- Staff is provided with continuous professional development programmes at regular intervals.
- Lecture rooms, laboratories including ICT labs and workshop are sufficient to cater to the current student population.
- Provision of access to internet through Wi-Fi facilities.
- Well maintained Career Guidance Unit (CGU) manned by a permanent professional career guidance counsellor.

Weaknesses

- Less number of qualified academic staff members to cater for some specialization subject areas such as Food Engineering and Process Technology, and Mechatronics.

- Limited opportunities provided to technical staff to obtain post-recruitment/postgraduate qualifications.
- Absence of evidence on staff and student exchange programmes operationalized through international collaborations.

Recommendations

- University together with the Faculty must expedite the staff recruitment process in order to recruit suitable senior academics, especially for the specialization areas of Food Engineering and Process Technology and Mechatronics.
- Provide adequate training for academic staff on OBE-SCL principles and approaches and strategies and tools and techniques.
- Introduce reforms into the students assessments systems and procedures keeping in line with the OBE-SCL principles and approaches.

Criterion 3: Programme Design and Development

The Department adopted the participatory approach during the design and development of the curricula of both study programmes. Curricula were designed in consistent with the mission, goals and objectives of the University while complying with the SLQF guidelines and OBE and SCL principles and approaches. Implementation of curricula is monitored regularly as a part of the internal quality assurance (IQA) process. The strengths and weaknesses of the Criterion 3 are as follows;

Strengths

- Department had designed and developed the curricula of both study programmes in liaison with Curriculum Development Committee of the Faculty with the cooperation of the staff members and external stakeholders.
- Curricula of both study programmes conform closely with the SLQF guidelines and OBE-SCL principles and approaches.
- Curricula of both study programmes contain a compulsory student research component and an industrial training attachment.
- Curricula of both study programmes accommodates interdisciplinary and multidisciplinary courses as core as well elective components to broaden the outlook and enrich the generic skills of students.
- Some degree of curriculum mapping has been done to show the alignment of course contents, teaching-learning and assessments with the Course and Programme ILOs.
- Course specifications are communicated to students.
- CGU collects and records information about students' employability after graduation.

Weaknesses

- Absence of Faculty Policy or Plan on curriculum development.
- Absence of departmental-level outcome-based performance indicators such as graduation rates and employment rates to monitor and evaluate the study programmes.
- Absence of provision for fall-back options at different levels for students who would decide to leave the programme halfway or not be able to complete the degree programme within the stipulated time.
- Needs assessment surveys and stakeholder feedback surveys were not done in regular and systematic manner so as to utilize the outcomes of such surveys for further improvement of the existing study programme curricula.
- Subject Benchmark Statements (SBSs) are yet to be prepared for both study programmes.
- Failure to adopt proper assessment procedures in conducting continuous assessments.
- Offering Industrial Training attachment as a non-GPA module.

Recommendations

- Faculty and Department must ensure that the future curricula updates are done in full compliance with the nationally prescribed guidelines such as SLQF, SBSs and OBE-SCL principles and approaches.
- Faculty and Department must construct the comprehensive mappings showing the alignment of course contents, and teaching-learning and assessment strategies with the Course and Programme ILOs to provide a holistic view of the study programmes.
- More efforts must be made to conduct stakeholder feedbacks surveys and use their outcomes for further improvement of ongoing study programmes and also for future curricula revisions.
- Faculty and Department must consider converting Industrial Training Attachment to a GPA module, and hence use the grades obtained from the module for calculating the final GPA.

Criterion 4: Course/Module Design and Development

The Faculty and Department adopt a participatory approach during the course design and development in both study programmes. The strengths and weaknesses of the Criterion 4 are as follows;

Strengths

- Intended learning outcomes (ILOs) were identified in each course module and course contents are listed in alignment with Course ILOs by adopting OBE-SCL principles and approaches.
- Contents of course modules while imparting the theoretical knowledge of the respective subjects / themes provides ample scope for developing critical thinking, independent and lifelong learning and team work skills.

Weaknesses

- Policy document for course design and development and approval is not available at the Faculty or University level
- Teaching and learning, and assessment strategies for differently-abled students are not considered during the course design and development process.
- A proper mechanism for frequent evaluation of the study programme and courses through student feedback, external stakeholders or subject experts has not yet been established.
- The human resources available for the design and development of courses for specialization of Food Engineering and Bioprocess Technology in Bachelor of Technology in Science and Technology – BTech (ScienceTec) are not adequate
- The involvement of F/QAC for course designing, development and approval/ monitoring process, regular assessment, reviewing and improvements of the courses is not adequate.
- A mechanism for regular evaluation of the course content, appropriateness and the achievement of learning outcomes and monitoring the progress has not been established.

Recommendations

- Develop a Policy document for course design and development and approval for the University and adopt it for the Faculty.
- Introduce Faculty QA policies and strengthen F/QAC functions to monitor course module evaluation and to use the findings to improve the course module content, delivery and assessment processes.
- Introduce teaching/learning and assessment strategies that would cater the needs for differently-abled students.
- Establishment of the mechanisms for frequent evaluation of the courses (the course content, appropriateness and the achievement of learning outcomes and monitoring) through student feedback, external stakeholders and subject experts.

- Strengthen the teaching panel for the specialization stream of Food Engineering and Bioprocess Technology in Bachelor of Technology in Science and Technology – BTech (ScienceTech) study programme.

Criterion 5: Teaching and Learning

The University together with respective Faculties and Departments offers all incoming students a one-week induction programme during which time the students are given briefings on the University, chosen study programme and the faculty and department which offer the study programme, and on student support services and welfare aspects, codes of practice, disciplinary procedures, etc. The Student are clearly conveyed of their rights, responsibilities and conduct for successfully completion of the chosen study programme. The strengths and weaknesses of the Criterion 5 are as follows;

Strengths

- Department provides timetables and course/module specifications before the commencement of respective courses/modules.
- All teachers deliver the study programmes adopting student-centred teaching- learning approach and blended delivery modes.
- Teachers encourage students' active engagement in creative work and discovery of new knowledge related to theory and practice that are appropriate to their respective study programmes.
- Adequate evidence of academic staff using blended mode of teaching with ample use of ICT-based tools and techniques; i.e., LMS, OERs and other applications, group work, case studies, assignments and presentations, etc.
- Adequate evidence of activities to promote research culture among academic staff and students - appraisal and award system for recognition of excellence in research, promotion of dissemination of information through national and internal publications and national and international symposia/conferences.
- Evidence of obtaining students' feedback on course delivery after the completion of each course/module.
- Evidence of conducing regular peer evaluation of teachers.
- Evidence of regular internal monitoring of teaching and learning conducted by the F/QAC.
- Availability of teaching and learning facilities and resources to encourage active learning by students.

Weaknesses

- Lack of evidence for the teacher appraisal and award system to identify and reward champions of teaching excellence.
- Lack of evidence of conducting Student Satisfaction Surveys and use of outcomes of such surveys for further improvement of programme/course delivery.
- Unavailability of reports on research output of staff and students and integrating the relevant information generated through research into teaching and training.
- Unavailability of documentation on work norms and workload of staff and capacity of lecture halls and laboratories and other infrastructure facilities
- No follow-up on staff and student feedback regarding the policy on gender equity and its practice at ground level.
- Unavailability staff feedback about the study programme – scope, contents, delivery and assessments.

Recommendations

- Facilitate students' engagement in co-curricular and extra-curricular activities so as facilitate the students acquiring soft skills.
- Maintain academic accountability records.
- Design and conduct student satisfaction surveys and the outcomes of student feedback must be considered in future curriculum revision as they are the main stakeholders in the university.
- Introduce undergraduate research forum/symposia conducted on annual basis for giving opportunities to students to sharpen their soft kills, presentation ability, time management, etc.

Criterion 6: Learning Environment, Student Support and Progression

The University and its faculties adopt a student friendly environment and adequate student support systems that ensure a conducive and caring environment for academic pursuits. Students are adequately guided through counselling and mentoring system. Peer interactions are encouraged for their holistic progression. The strengths and weaknesses of the Criterion 6 are as follows;

Strengths

- A student-friendly academic and technical support system is adopted with adequate human and physical resources including adequate number of full-time staff, technological infrastructure, scientific laboratory facilities, language laboratories, library facilities etc.
- Students are clearly conveyed during induction programme of their rights, responsibilities and code of conduct which would ensure successful engagement in academic pursuits.
- Department provides student counselling and mentoring focusing on student support, choice of courses, assessments, career paths, etc.
- Initiatives have been taken to monitor the student learning experience, achievement and satisfaction annually.
- Library usage is promoted by adopting ICT-led tools to facilitate students' access and use of the library efficiently.
- Exposure to 'world of work' is promoted through Industrial Training/In-Plant Training which is operationalized in collaboration with employers who offer work-based learning or placement opportunities.
- Career Guidance Unit undertakes programmes for students to provide the career information to students, and also to develop the employability and other soft skills.
- Employability of students is promoted through working in partnership with external stakeholders including the private sector and Alumni.
- Retention, progression, completion/ graduation rate, employment rate and per student cost are regularly monitored.
- Initiatives are taken to gather the information about student satisfaction on the support services provided.
- Gender equity and equality is maintained by offering gender neutral and equal opportunities for students to participate in the decision making bodies and processes.
- Active academic/social interaction is maintained between the faculty and students through diverse activities.
- Students are clearly conveyed of their rights, responsibilities and conduct for successfully completing the programme through the Code of Conduct.
- Faculty/ Department provides student counselling and mentoring focusing on student support, choice of courses, assessments, career paths, etc.
- Initiatives are taken to monitors the student learning experience, achievement and satisfaction annually
- ICT-led tools are used to facilitate students' access and use of the library efficiently
- The learning opportunities are enhanced by collaborating with employers who offer work-based learning or placement opportunities through In-Plant Training.

- Career Guidance Unit undertakes programmes for students to provide career information and to develop career management skills and soft skills

Weaknesses

- Training programmes for the students on the use of common learning resources and specialized learning resources are limited.
- Absence of a monitoring mechanism of student support services to assess the usage, effectiveness and shortcomings.
- Limited support provided for catering for the needs of students with special needs (differently-abled students).
- Absence of an institutional mechanism to use the information generated through the student feedback/satisfaction surveys for further improvement of the quality and standards of study programmes and their delivery, and student support services.
- Absence of provision for providing fall-back options for those students who fail to progress satisfactorily, and also for those who opt to drop out from the programme.
- Absence of mechanism to monitor the student progression from one level to the next higher level.
- Absence of institutional mechanism for handling student grievances, complaints and academic appeals.

Recommendations

- Conduct frequent training programmes on common learning resources and specialized learning resources for the students.
- Establish mechanisms for; i) monitoring the student support services, utilizing the information collected through student satisfaction survey for further improvement of such services and ii) monitoring the student progression from one level to the next level and for addressing the student complaints and academic appeals
- Enhance the facilities for special support and assistance services provided for students with special needs (differently-abled students)
- Consider the possibility of providing fall-back options for those students who fail to progress satisfactorily and for those who opt to drop out from the programme.

Criterion 7: Student Assessment and Awards

The University has put in place the required student assessment policies, regulations and processes to maintain academic standards. Though, the best practices such as question moderation and second marking are practised, the Faculty is yet to seek the involvement of external examiners. The strengths and weaknesses of Criterion 7 are as follows;

Strengths

- Approved procedures for question paper setting, moderation, and marking of answer scripts are in place and are closely followed.
- There is evidence for undertaking the second marking of question papers.
- Both formative (graded) and summative assessments are done, and the performances of formative assessments are counted for calculating final marks.
- Results are released within three months from the completion of examinations.
- Students are given the option to submit a request for re-scrutinising their answer scripts.
- An industrial placement evaluation record book which has been properly designed is in place.
- High performing students are rewarded by awarding medals and prices at the Annual Convocations.

Weaknesses

- Absence of University Examination Manual.
- Question moderators and second-marking examiners are appointed only with the approval of the Faculty Board.
- Second marking process is not clear and no evidence of availability of second marking examiners' reports.
- Deployment of probationary and temporary staff as examiners.
- Absence of a uniform format for the mark sheets used for entering marks.
- Absence of evidence on the alignment of examination strategies with Course/Module ILOs and Programme ILOs.
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- Absence of a formalized assessment process for evaluating the student reports from assignments.
- Absence of evidence on the second examiners' involvement in dissertation evaluation.
- Absence of evidence on the provision of feedback to students on their performance at the formative assessments.
- Absence of evidence on formal plagiarism checking on reports and thesis submitted by students.

Recommendations

- Prepare an Examination Manual for the University.
- Introduce a rewarding scheme during the academic programme for high performers to encourage students.
- Upgrade the evaluation processes of the final year thesis and industrial placement by defining criteria, assessment elements and making scheme

Criterion 8: Innovative and Healthy Practices

The Faculty and Department have adopted several innovative and healthy practices that are aimed towards promoting and fostering quality and standards of both study programmes. An ICT-based platform is in place to facilitate multi-mode delivery and SCL approach in teaching learning process. Further, the Faculty and Department maintain strong industry linkages and include a compulsory industry placement module in the curricula of both study programmes. The strengths and weaknesses of the Criterion 8 are as follows;

Strengths

- LMS is in place and it is effectively utilized for programme delivery.
- Wi-Fi facilities are available within the university premises.
- Faculty and Department maintain good interaction with industry.
- Undergraduate Research Project and Industry Attachment are built into the curricula as compulsory modules.
- Staff engagement in research is evident.
- Private sector involvement in the study programme is commendable.
- Social and cultural activities are facilitated.
- Social harmony and ethnic cohesion among the university community are evident.
- Interaction with the Alumni is significant.
- Stakeholder interaction is also at adequate level.
- Ragging- and harassment- free environment is maintained.

Weaknesses

- Postgraduate supervision is limited.
- Utilization of OER is limited.
- Commercialization of innovations is inadequate.
- Services provided to the outside are limited.
- Fall-back options and lower level exist points are lacking.
- Training opportunities for mentors and counsellors are inadequate.
- International collaborations are limited.
- Interactions with local professional bodies are limited.
- Opportunities provided for student research presentation are limited.

Recommendations

- Take steps for further enhancement of utilization of OER for academic teaching and learning.
- Introduce a fallback option and credit transfer procedure into the study programme curricula.
- Take steps to promote outreach activities.
- Income generation possibilities have to be fully utilized and recommend exploring the opportunities further.

Section 6: Grading of Overall Performance of the Programmes

Table 6.1 Assessment Criteria and Score

No.	Criteria	Weighted minimum score	Actual criterion-wise score
1	Programme Management	75	137
2	Human and Physical Resources	50	96
3	Programme Design and Development	75	133
4	Course / Module Design and Development	75	119
5	Teaching and Learning	75	117
6	Learning Environment, Student Support and Progression	50	89
7	Student Assessment and Awards	75	132
8	Innovative and Healthy Practices	25	39
	Total score (out of 1000)		862
	Total score (out of 100)		**86.2**
	Grade	**A**	
	Performance Descriptor	**Very Good**	
	Interpretation of Descriptor	*High level of accomplishment of quality expected of a programme of study; should move towards excellence.*	

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Section 7: Commendations and Recommendations

In addition to the commendations and recommendations already made in Section 5, under the respective review criteria, the Review Team wishes to make following additional commendations and recommendations;

Commendations

- The Faculty has an Annual Action Plan that aligns with university Corporate Plan.
- Student Handbook and Study Programme Prospectus are very informative and provide valuable information to the students and other stakeholders.
- Effective use of ICT-based tools and applications by the University and Faculties and the community – up-to-date University Website with links to the Web Pages of respective faculties and departments, centres and units.
- Optimum use of LMS platform for study programme delivery and provision of greater access to internet via Wi-Fi-zones that have been established across the university.
- University adopts and promotes the concept of boundaryless faculties and departments thus allowing resources sharing opportunities and greater interactions among staff and students across faculties and departments, and among disciplines.
- Faculty is well resourced with basic infrastructure facilities and teaching-learning resources.
- University maintain its premises in attractive manner so as to provide a conducive environment for all stakeholders.
- Participatory decision making process where students are provided he opportunities to represent in key decision making bodies.
- All attempts have been made to prevent ragging and gender-based violence within the University thus creating a very conducive learning environment for students.
- Department's engagement in income generating activities by offering fee-levying.
- Progressive development taking place within the Faculty – adding a new department and planning for a new degree programme

Recommendations

- Design and adopt a proper mechanism for monitoring of the progress of implementation of Actions Plans of the Faculty (together the relevant activates to be carried out by

respective departments) and discuss the progress at the Faculty Board at regular intervals.

- Address the shortages of qualified staff – particularly for Food Engineering and Bioprocess Technology and Mechatronics fields - to meet the current demand and upgrade the quality of the study programmes.
- Assessment of impacts of supplementary courses on programmes/graduate outcomes – particularly the impacts of the course modules such as history, geography, languages, etc.
- Encourage and facilitate technical staff to proceed for post-recruitment training either at postgraduate level or to acquire the specialized training in the relevant field in order to upgrade their competencies.
- Take measures to promote greater student-teacher interaction, particularly at the lecture–discussions and practical/workshop sessions.
- Streamline the formative assessment process and promote greater involvement of senior staff and make these assessments to be more effective by providing constructive feedback to students on their progression and shortcomings.
- Streamline the examination process by defining roles and responsibilities of external examiners and moderators.
- The University must take steps to prepare a Manual of Examination Procedures that would ensure adoption of best practices across the Faculties and Departments.
- Consider converting the Industrial Training module as a credited module counted for the final GPA.
- Streamline the supervision and evaluation process of the student research module.
- Consider incorporation of field studies and field visits/excursions into the study programme curricula to expose students to 'world of work' and enhance enthusiasm and active participation of students in the learning process.
- Streamline the peer evaluation system and student feedback assessment process.
- Explore the possibility of attracting foreign scholars and students by initiating collaboration with overseas universities/institutions.

Section 8: Summary

The Department of Science and Technology of the Faculty of Applied Science, Uva Wellassa University of Sri Lanka, is aware of its relative strengths, the uniqueness of its study programmes. In this respect, the Faculty of Applied Sciences plays a significant role and contributes towards further strengthening of these programmes. The Faculty and the Department together have taken several meaningful and effective steps to provide adequate physical resources – teaching-learning facilities, laboratories, library, etc., and common amenities such as hostels, sports and recreational facilities and healthcare service facilities to students so as to allow them to engage in academic pursuits in a conducive and pleasing environment. Despite having certain difficulties, the Faculty and Department together have made commendable efforts in maintaining the acceptable level of quality and standards in their degree programmes. Further, progressive efforts are also made to expand the scope of the Faculty by establishing a new department and planning for a new attractive degree programme.

As per the application for the review of Bachelor of Technology in Science and Technology – BTech (ScienceTec) and Bachelor of Science in Mineral Resources Technology- BSc (MRT), as a cluster, of Uva Wellassa University of Sri Lanka, the UGC appointed a review team of four members based on their expertise for the review. The Review Team had conducted the desk review based on the information provided in the Self Evaluation Report (SER) and using the evidences uploaded onto the online platform, and then proceeded to conduct a two-day site visit to conduct stakeholder meetings and verify the claims made. The Review Team is of the view that the SER was prepared in accordance with the guidelines prescribed by the UGC “Manual of Review of Undergraduate Study Programmes of Sri Lankan Universities and Higher Education Institutions- 2015”.

As of the review findings, the Review Team is of the view that the Faculty of Applied Science and the Department of Science and Technology have taken steps to internalize many best practices prescribed by the Review Manual of the UGC, and been able to maintain an acceptable level quality and standards of its two study programmes - BTech (ScienceTec) and BSc (MRT). The curricula and syllabi of both programmes have been designed in close adherence with the SLQF guidelines and OBE-SCL principles and approaches. The course/module contents and assessment strategies have been constructively aligned with Course/Module ILOs which have intern been defined in alignment with the ILOs and the graduate profiles of the degree programmes.

Learner support services are provided through counselling and mentoring systems and through other ancillary training /service units such as ELTU, CGU, Library, training workshops, Student Centre, and Department of Physical Education, etc. Access to internet is provided through

dedicated Wi-Fi zones established across the university premises. In general, the University has provided a healthy environment for students to engage in academic pursuits. Further the incoming students are provided with all required information during the orientation programme conducted at the commencement of their respective study programmes. Nevertheless, the Faculty and the Department collectively should consider greater adoption of SLQF guidelines and OBE-SCL principles and approaches in curricula design and development, developing the departmental-level outcome-based performance indicators, initiating fall-back options at different levels of the study programmes, developing a mechanism to utilize the outcomes of student satisfaction surveys, student feedback surveys, employers satisfaction surveys, employability surveys, etc., for further improvement of the existing study programme.

The two study programmes, as a cluster, have secured the above minimum scores required for all 8 criteria prescribed by the Programme Review Manual and has achieved an overall score of 82%. Therefore, it is recommended to award **Grade "A"** for the Bachelor of Technology in Science and Technology - BTech (ScienceTec) and Bachelor of Science in Mineral Resources and Technology- BSc (MRT) study programmes of the Uva Wellassa University of Sri Lanka, and the quality descriptor is interpreted as "High level of accomplishment of quality expected of a programme of study; should move towards excellence".