SAN DIEGO STATE UNIVERSITY

Georgia

SDSU 197-05-2019
May 8, 2019

Magda Magradze
Chief Executive Officer
Millennium Challenge Account – Georgia

Dear Ms. Magradze,

Please find enclosed herewith the revised ABET&ACS Progress Report as a deliverable for the Provision of Degree Accreditation and Institutional Support Initiative for Science, Technology, Engineering, and Mathematics, as required per the contract.

Please feel free to contact me if you have any questions.

Sincerely,

Halil Guven
Dean, SDSU-Georgia
San Diego State University
Address: 5 Kostava Street, 3rd floor
Tbilisi 0108, Georgia
Office: +995 32 2311611
Mobile: +995-555-768-269
Email: hguven@sdsu.edu

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SAN DIEGO STATE UNIVERSITY

Georgia

ABET & ACS PROGRESS REPORT

The objectives of the ABET initiative of SDSU Georgia in CY4 were: To determine progress made by the partner universities since the SDSU Georgia ABET report completed in September 2017. The report provided recommendations that it may be possible to consider additional pathways, a “second track”, that do not bridge through the SDSU-delivered programs first, to facilitate the accreditation of programs at the partner universities. The report delineates and identifies the steps and timeline, for possible ABET accreditation of programs at partner universities. As a result of work done in CY4, SDSU-G identified potential second-track programs (2 second track programs at TSU and two at GTU) for ABET accreditation and started working with partner universities to prepare for accreditation. The TSU programs are well ahead of the GTU programs in developing and implementing the ABET required procedures and it is possible for the TSU programs to be ready for an ABET accreditation review visit in the fall of 2019. The earliest possible ABET review visit for GTU programs would be the fall of 2021. The ISU Computer Engineering and the Electrical engineering programs have approval for the transition of dual programs with SDSU-G and this method could allow the programs to be ready for an ABET review visit in the fall of 2022.

May, 2019

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1. Introduction

The country of Georgia has a critical shortage of science, technology, engineering and mathematics (STEM) professionals, educated to current international standards, graduating from their institutions of higher education. To address this problem, the Georgian government through the Millennium Challenge Account Georgia, with funding from the U.S. Millennium Challenge Corporation (MCC) contracted with SDSU to provide an American university education in Georgia focused on STEM disciplines that would improve human capital in the Georgian labor force.

SDSU will offer a variety of accredited degrees and certificates based upon recommendations of the government of Georgia, and regular needs assessments from local industry advisors. Initial degree offerings include the following ABET accredited programs: BS Computer Engineering; BS Electrical Engineering; BS Computer Science; and the BS Civil Engineering and BS Construction Engineering was added in September 2017. Initial offerings also include ACS-accredited BS Chemistry/Biochemistry program.

SDSU is approaching this project in partnership with Ilia State University, Tbilisi State University, and Georgian Technical University – the three premier public universities in Georgia – to provide accredited Bachelor's degrees in Georgia. Using the facilities of these three universities, SDSU-Georgia will focus on STEM education to train an advanced workforce to meet the growing needs of Georgia.

The second, equally important part of SDSU's contract is to collaborate with the partner universities to facilitate the accreditation of selective STEM BS programs at the partner institutions by ABET or ACS. Tbilisi State University, Ilia State University, and Georgian Technical University have executed preliminary Memoranda of Understanding (MOU) that reflect the institutions' mutual commitment to execute collaborative programs, develop courses and academic programs, joint scientific and technical research programs, exchanges of teaching and research personnel, student exchanges, and other mutually beneficial activities that enhance academic, research or technical progress at the universities.

This report summarizes the work accomplished in ABET related initiatives undertaken by SDSU at the partner universities during CY4.

2. Background

In February, 2013, the Millennium Challenge Account Georgia contracted with the ABET Foundation to provide consultancy services in order to assess STEM Programs and Design of Investment to Build Capacity for ABET Accreditation of Georgian universities. The purpose of the contract was to assess the capacity needs of relevant Georgian programs of study to deliver high quality accredited STEM bachelor degrees.

In December, 2013, the ABET Foundation provided information relative to the readiness of STEM programs at four Georgian universities for a review by ABET for possible program accreditation. Under preliminary evaluation by the ABET Foundation, Georgian degree programs presently exhibit: 1) A lack of consistent assessment of student learning and no mechanism to demonstrate continuous improvement process; 2) A lack of sufficient General Education; 3) Absence of an appropriate student guidance advisory that aids students with their curriculum and career matters; 4) The aging faculty members and their low involvement with professional organizations; 5) A lack of modern teaching and laboratory equipment in many discipline areas.

In response to the ABET Foundation's report, the core methodology proposed by SDSU to facilitate the accreditation of the partner institutions in the 45-month contract was to overlay SDSU's existing, and accredited, curricula onto the framework already provided by the partner institution.

The projection was that by the time the partner institution programs are eligible for consideration (e.g., have at least one graduate), nearly all of the first group of SDSU-Georgia programs will be transitioned to partner-institution instruction only, and thereby be appropriate to be submitted under a Request for Evaluation (RFE). It is projected that some programs could potentially be eligible and prepared to submit the RFE as soon as the end of CY5. Hence, by 2020 these programs should be in the process of applying for ABET or ACS accreditation. Some programs may have required a longer transition period depending on the speed of capacity building within that program.

3. Part One: ABET

In brief, ABET accreditation requires consideration of the programs according to several criteria, which have been specifically targeted by the proposed curricula, including:

Students – the qualifications of the students that are accepted and the monitoring of their performance against graduation requirements.

Program Educational Objectives – the mission of the program and its consistency with the institution's mission, and the achievement of these objectives. This criterion requires a working relationship with industry and an Industry Advisory Board in order to establish objectives and to assess the degree to which graduates achieve them in practice after graduation.

Program Outcomes – program outcomes must be established to achieve the program's educational objectives, and performance must be assessed against them. This assessment is made via metrics that are established with both direct and indirect assessments. Culminating experiences are also incorporated in the assessment strategy.

Continuous Improvement – Metrics must be monitored over time and used to improve the curriculum in general.

Curriculum – program curriculum is defined to achieve the program outcomes, and the details of this connection must be established and maintained.

Faculty – the, qualifications, size and the composition of the faculty to meet the needs of the curriculum.

Facilities – the physical resources (classrooms, labs, offices) available to support the needs of the program.

Support – financial resources to allow faculty development and support services of the Departments providing these programs.

At least every six years, programs submit a self-study document detailing the performance of the program against the criteria stated above. Subsequently, a visit is organized by ABET with a team of independent evaluators who make their own assessment of the accuracy of the self-study and make a recommendation for continued accreditation. The self-studies must include evidence of monitoring against all these criteria throughout the intervening period.

Accreditation at SDSU is an institutional priority with management responsibilities falling directly with the chairs of the relevant departments, overseen by the Deans of the colleges, and,

ultimately, by the Provost of the university. SDSU maintains accreditation in all the proposed degrees and is an active partner with ABET and ACS (the two accrediting organizations relevant to the first and second group of proposed degrees) in a process of continuous improvement not only to maintain accreditation, but also to improve student learning and student capacity to enter the job market in their chosen fields.

In all cases, learning assessments will be applied that are consistent with accreditation requirements and consist of an appropriate mix of direct and indirect assessments, with appropriate measurement tools. An example of direct assessment includes homework, examinations, class discussion and projects. Indirect Assessment includes qualitative student surveys that assist in adjusting the pace and focus of class lectures and homework, ensuring adequate progress and full compliance in learning outcomes for the students.

3.1 Objectives of CY4 ABET initiative

The SDSU Georgia ABET report completed in September 2016, provided recommendations that it may be possible to consider additional pathways, a "***second track***", to facilitate the accreditation of programs at the partner universities that do not bridge through the SDSU-delivered programs first. In this context, the **ABET First-track** is defined as the process of overlaying SDSU's existing, and accredited curricula onto the framework already provided by the partner institution. The **ABET *Second-track*** is defined as the accreditation of existing Georgian language STEM programs at the partner universities.

In September 2016 SDSU-G proposed to assist partner universities to obtain ABET Second-track accreditation for a few of their existing Georgian language STEM programs ("pilot programs"), for which they already have a number of graduates working in the industry. Based on a preliminary assessment of this idea during the CY2, SDSU-G determined that it may be possible to complete ABET Readiness report for the Second-track pilot programs by CY5, AY 2018-19, and potentially have ABET accreditation for pilot Georgian language programs in the AY 2020-21.

SDSU-G submitted an ABET report to the partner universities which provided a roadmap for the second-track ABET accreditation of the potential pilot programs. An action plan and a framework for the tasks to be undertaken during the remaining part of CY2, and the CY3 (8 months budget: Nov 1, 2016 - June 30, 2017) were also provided. A roadmap for ISU has not been proposed as ISU does not have any programs that can be piloted as second track. ISU is

commencing a new English language Computer Engineering program in Fall 2018, which may lend itself to the first-track accreditation

Table *1* shows the proposed first-track and second-track programs which can be prepared for ABET accreditation in each partner university. SDSU-G will pursue the ***first-track*** ABET accreditation as planned, or modified as appropriate, based on the outcome of the ABET-second track.

Table 1. First-track and Second-track ABET programs at partner universities

PU	First – track programs	Second – track pilot programs	Other (initiated by PU's for ABET review)
TSU	Computer Engineering	Computer Science Electrical Engineering	
GTU	Computer Engineering	Civil Engineering Electrical Engineering	Computer Science (BIG DATA) Biomedical Engineering
ISU	Computer Engineering Electrical Engineering Civil Engineering		Computer Science

During the Fall 2016 and Spring 2017 semesters, the ABET committees of GTU and TSU worked closely with SDSU-G, under the guidance of our ABET Officer, Dr. Hashemipour, to fulfill the first-track and second-track tasks. ISU ABET committee was activated in Fall 2017 semester to work on a first-track program in Computer Engineering.

The MCA-Georgia has signed a contract with the ABET Foundation, which provided ABET Accreditation Readiness Assessment of STEM Programs for the SDSU-G partner universities in September 2017.

Last comprehensive ABET progress report by SDSU-G was submitted in September, 2017. After their first visit in September 2017, ABET Foundation came for their second visit in April, 2018. This visit was a positive step towards ABET accreditation in partner universities.

Experts stated that TSU two programs can be the first ones from Georgia to apply for review in 2019. It was estimated that TSU Electrical Engineering program will require $274,445 USD and

Computer Science program $179,225 USD during the next five years. The numbers have already been communicated with the Ministry. TSU has managed to significantly improve the self-study report after the visit: curriculum changes have been approved by the Academic Council. Phase three renovations at TSU have also been completed.

There are currently four SDSU Georgia programs implemented in TSU: Chemistry/Biochemistry, Computer Engineering, Computer Science, and Electrical Engineering. Computer Science and Electrical Engineering TSU programs will cost $3,500 USD/year after ABET accreditation.

Georgian Technical University has established ABET committee (Board) and designated a position of an advisor to the Rector. GTU Civil Engineering and Electrical Engineering departments have prepared Preliminary Self-study Reports (PSSR) and received initial review from ABET Foundation. Due to extensive curriculum changes needed to make existing second-track programs at GTU compatible with ABET requirements, rather than revising the existing programs, GTU decided to offer two new ABET-compatible programs in Civil Engineering and in Electrical engineering in the Fall 2018. These new programs require an approval from EQE which is scheduled for June 2018 for an intake of first group of students in the Fall 2019. These programs will have a much smaller student quota, and higher NAEC thresholds in Math and Physics subject areas. This will allow for selection of students who are better suited for the more rigorous curricular requirements of an ABET accredited program. The first group of students to study with the new curriculum will be selected amidst the current students completing their Freshman year in the Construction Engineering program at GTU. These students can commence the new program as Sophomores in Fall 2018, through the mobility process. The earliest possible ABET review visit for GTU programs will be the Fall 2021. The self-study reports have been revised for the second visit of ABET Foundation in 2018.

There are currently five SDSU Georgia programs implemented in GTU: Chemistry/Biochemistry, Computer Engineering, Electrical Engineering, Civil Engineering, and Construction Engineering. GTU is currently studying the feasibility of the transitioning the four SDSU Georgia first track Engineering programs to GTU as well.

A new four-story campus to be equipped by SDSU Georgia for Ilia State University is being constructed. The building will include: Electrical Engineering, Computer Engineering, Civil Engineering laboratories and design space for students on the fourth floor. Necessity for budget allocation has been identified for the following categories:

- Technicians for Laboratory supervision and maintenance (one is already hired);

- Yearly maintenance and update of the Laboratories;
- Subscription for IEEE and ACM E-libraries;
- Time allocation for ABET Committee Members;
- Internationalization of the Programs;
- Programs Review and ABET Accreditation Costs.

There are currently two SDSU Georgia programs implemented in ISU; Computer Engineering, and Electrical Engineering. ISU programs intended for future ABET accreditation are as follows:

The ISU Computer Engineering and the Electrical engineering programs have approval to transition the dual programs with SDSU-G and this method could allow the programs to be ready for an ABET review visit in the Fall of 2022. The ISU Civil Engineering program intends to seek approval to transition the dual ISU/SDSU-G Civil Engineering program as a standalone program. The first possible date for this program to have an ABET review visit is Fall 2023.

3.2 Visit of the partner university representatives to SDSU for ABET Symposium

ABET Symposium organized by the Accreditation Board for Engineering and Technology Inc. for accreditation, assessment and global exchange of best practices in STEM education took place on April 12-13, 2018 in San Diego, California. The symposium was attended by 15 representatives of SDSU Georgia partner institutions. The purpose of the visit, besides attending the symposium, was for the group to attend trainings organized at SDSU main campus on the Accreditation Board for Engineering and Technology (ABET), and Western Association of Schools and Colleges (WASC) accreditation.

Delegation of partner universities, 15 representatives listed in arrived in San Diego on April 6, 2018 to attend training at SDSU home campus and ABET symposium.

Table 2. Partner university representatives attending ABET symposium in April 2018

Tbilisi State University (TSU) representatives	**Ilia State University representatives**	**Georgian Technical University (GTU) representatives**
Nikoloz Melkadze, ABET Facilitator *Giorgi Ghvedashvili*, Faculty of Electrical Engineering	*Giga Zedania*, Rector *Nino Zhvania*, Head of Quality Assurance Department	*Aleksander Zedelashvili*, ABET Facilitator *Lali Khuntsaria*, Faculty of Electrical

Tsismari Gavasheli, Faculty of Electrical Engineering *Manana Khachidze,* Faculty of Computer Engineering *Magda Tsintsadze*, Faculty of Computer Engineering	*Elene Zhuravliova*, Head of QA for the department of Natural Sciences and Engineering *Nana Dikhaminjia*, ABET Facilitator, Faculty of Computer Engineering *Giorgi Veshapidze*, Faculty of Computer Engineering	Engineering *Giorgi Gigineishvili*, Faculty of Electrical Engineering *Alexander Bagration-Davitashvili*, Faculty of Civil Engineering *Konstantine Bziava*, Faculty of Civil Engineering

On Monday, April 9, 2018 the delegation attended training at San Diego State University Engineering and Interdisciplinary Sciences Complex that was unveiled on the first day of the Spring 2018 semester. The training program agenda is given in Appendix 1. Prior to training, participants were given a chance to tour the campus spaces equipped with cutting-edge technology.

Within the first part of the SDSU training, each partner university made a separate presentation and shared their expectations regarding ABET accreditation process. Presentation of Tbilisi State University was facilitated by Nikoloz Melkadze, Ilia State University was represented by Nino Zhvania, and Georgian Technical University – by Alexander Zedelashvili and Alexander Bagration-Davitashvili. Presentations were followed by Q&A Session, emphasizing ABET expectations, along with the review of SDSU training and ABET Symposium program. Presentations of partner universities are given in Appendix 2.

Later on, the participants were split up into three groups for departmental breakout sessions.

Computer Science Breakout Session Group Members	Electrical/Computer Engineering Breakout Session Group Members	Civil/Construction Engineering Breakout Session Group Members
Majid Hashemipour, ABET expert *Nikoloz Melkadze*, TSU *Manana Khachidze*, TSU *Magda Tsintsadze*, TSU	*Lali Khuntsaria*, GTU *Giorgi Gigineishvili*, GTU *Giorgi Ghvedashvili*, TSU *Tsisana Gavasheli*, TSU *Nana Dikhaminjia*, ISU *Elene Zhuravliova*, ISU *Giorgi Veshapidze*, ISU	*Konstantine Bziava*, GTU *Alexander Bagration-Davitashvili*, GTU *Nana Zhvania*, ISU

Objectives of this was to share experience with partner university representatives, and to enable them to prepare short and long-term action items for ABET accreditation (self-study report preparation, industry input, student materials, faculty course materials, faculty release time). Also, partner university representatives were given an opportunity to observe how SDSU handles program review process, and continuous improvement process, and storage and availability of documents.

The second day of SDSU Training commenced with a short discussion on Western Association of Schools and Colleges (WASC) accreditation and its requirements. The recent changes in ABET, like Criterion 3 and Criterion 5 were also covered during the second day of SDSU Training. Presentations by SDSU are given in Appendix 3 (Eugene Olevsky, Janusz Supernak, Stephen Schellenberg, Asfaw Beyene).

Beyond the discussion sessions, participants were shown labs and facilities, ABET Rooms for Reviewers, break rooms, etc. In addition, Georgian delegation attended the spring 2018 SDSU Industrial Advisory Board of Civil, Construction and Environmental Engineering as observers. ABET training at SDSU.

Prior to ABET Symposium commencement, on April 11, 2018, SDSU-Georgia provided fifteen representatives of its partner universities with an opportunity to participate in the pre-Symposium Fundamentals of Program Assessment Workshop (FPAW). This workshop provided training to:

- Identify key elements of a functional assessment process.
- Clarify the similarities and differences between the course and program assessment.
- Make student outcomes measurable with the development of performance indicators.
- Understand the methods and measures to assess student outcomes.
- Develop rubrics to assist in evaluating student performance in achieving student outcomes.
- Understand the pros and cons of various data collection methods.
- Review an example of reporting results.

The workshop was designed to fully engage the faculty members and ABET facilitators in the creation of tools for continuous improvement and effective planning of process timelines. Partner universities plan to use the information received in the training for training of other faculty members at their respective institutions. Since the new national accreditation standards

issued by EQE are very similar to the ABET continuous improvement logic, the ABET training on Fundamentals of Program Assessment proved very useful for partner universities. Agenda for the ABET pre-Symposium Workshop is attached as Appendix 4.

After the ABET Symposium, SDSU-Georgia conducted a short online survey to gather views of the partner university representatives on the ABET training visit to San Diego. The results of the survey are attached as Appendix 5.

3.3 Second visit of ABET Foundation, March, 2018

Upon return from ABET Symposium, ABET Foundation came for its second visit to Tbilisi in April, 2018. Second visit report is attached as Appendix 6. An analysis of the report findings will be given in the Overall Observations and Recommendations section.

3.4 ABET timeline by program

The projected dates for the likely first opportunity for ABET review of partner university programs are given in. As noted in the **Table 3**, first opportunity for ABET review of programs is Computer Science and Electrical Engineering programs at TSU. The ABET process/ timeline for these two programs are given in **Table 4**.

Table 3. Likely first opportunity for ABET review of Partner University programs.

PARTNER UNIVERSITY	Program	ABET Track	Same as SDSU-Georgia Program	Approval for SDSU-Georgia Transition	Likely first opportunity for ABET review
TSU	Computer Engineering	First	Yes	Yes	Fall 2023
	Computer Science	Second	No	N/A	Fall 2019
	Electrical Engineering	Second	No	N/A	Fall 2019
ISU	Civil Engineering	First	Yes	Yes	Fall 2023
	Computer Engineering	First	Yes	Yes	Fall 2022
	Computer Science	N/A	N/A	N/A	Fall 2023
	Electrical Engineering	First	Yes	Yes	Fall 2022
GTU	Civil Engineering	Second	No	N/A	Fall 2022
	Construction Engineering	N/A	N/A	N/A	N/A
	Computer Engineering	First	Yes	Yes	Fall 2023
	Electrical Engineering	Second	No	N/A	Fall 2022
	Computer Science	N/A	N/A	N/A	Fall 2023

Table 4. TSU Second-track programs: Electrical Engineering and Computer Science (potential first opportunity for ABET visit in 2019)

ABET process/timeline	2018				2019				2020
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Visit of ABET Foundation Experts		X							
Readiness Review (RR) Report			X						
Submission of RR			X						
ABET response to RR				X					
Outcome Assessment Plan				X					
Continuous Improvement Plan					X				
Visit of ABET Foundation Experts					X				
Submit a request for Evaluation					X				
Preparation of final SSR						X			
Submission of SSR							X		
ABET Response and questions							X		
ABET On-site review								X	
Post-visit activity								X	
ABET Board approval									July 2020

Q1: January, February and March **Q2: April, May and Jun**

Q3: July, August and September **Q4: October, November and December**

Table 5. ISU First-track program: Computer Engineering (potential first opportunity for ABET visit in 2022)

ABET process/timeline	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Commencing of the program	X					
Outcome Assessment Plan		X				
Continuous Improvement Plan			X			
Outcome Assessment Plan				X		
Continuous Improvement Plan				X		
First Graduate of this program				X		
Preparation of final SSR				X		
ABET Response and questions					X	
ABET On-site review					X	
Post-visit activity					X	
ABET Board approval						July 2023

Table 6. TSU and GTU first-track program: Computer Engineering (potential first opportunity for ABET visit in 2023)

ABET process/timeline	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Commencing of the program	**X**					
Outcome Assessment Plan		**X**				
Continuous Improvement Plan			**x**			
Outcome Assessment Plan				**x**		
Continuous Improvement Plan					**x**	
First Graduate of this program					**x**	
Preparation of final SSR					**x**	

ABET Response and questions						**X**
ABET On-site review						**X**

GTU Second-track programs: Electrical Engineering and Civil Engineering

Q1: Spring **Q2: Fall**

GTU first-track program: Computer Science (BIG DATA)

ABET process/timeline	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Commencing of the program	X					
Outcome Assessment Plan		X				
Continuous Improvement Plan			X			
Outcome Assessment Plan				X		
Continuous Improvement Plan					X	
First Graduate of this program					X	
Preparation of final SSR					X	
ABET Response and questions						X
ABET On-site review						X

3.5 Legislative and Policy related initiatives

During the CY4, SDSU-G did not perform any tasks related to any policy changes (at institutional level) or legislative changes at the national level (e.g., grading system changes in the Georgian Higher Education Law) that may be needed to implement ABET at the partner universities. This activity will be advanced in the next year.

3.6 Recommended Tasks for CY5

Outcome Assessment Plan:

Establishing:

i. Student outcomes consistent with ABET
ii. Relationship between student outcomes and program educational objective
iii. Assessment and Evaluation of Student Outcomes at Course Level
iv. Assessment / Evaluation Tools for Capstone design reports
v. Process for Attainment of Student Outcomes
vi. Data collection at the end of every semester
vii. Formation of an Industrial Advisory board for Computer Science program at TSU.

Continuous Improvement Plan:

i. Program Educational Objectives (PEO) Assessment Metrics and Cycle
ii. Feedback Channels; Alumni, employer and faculty surveys.
iii. Preparation of Readiness Review (RR) Report

3.7 Overall Observations and Recommendations

The ABET accreditation process is a lengthy and cumbersome process and most of the work must be done by faculty members of the programs. So far this work has been done mostly by one person in each program in the partner Universities. A key reason for this may be a lack of motivation and enthusiasm of the faculty members. Partner university faculty and staff should have incentives to follow through ABET related initiatives. The process will require that all faculty members participate enthusiastically in the effort required. Currently, the ABET program coordinators teach SDSU-G students and in addition to their normal annual workload, which

exceeds over 20 hours of teaching load per week. SDSU-G recommends that a stipend be allocated to each program ABET coordinator at the partner universities and their teaching work load reduced.

The faculty participation is significantly more evident at TSU than at GTU. Furthermore, the program at TSU began some work on developing assessment plans during the Fall 2017. This process needs to continue and likewise, be refined for improved assessing of Student Outcomes (Criterion 3) attainment. The results of these evaluations is systematically utilized as input for the continuous improvement during the spring 2018.

In addition, a clear system of direct and indirect assessment has to be in place. The Course Files should be systematically gathered and analyzed for midterms, quizzes and finals for improvement of the program delivery. For indirect assessment the students, faculty members, alumni and industry should be systematically surveyed to keep the curriculum relevant and industry oriented.

Finally, as outlined in Part 2, ABET accreditation is based on several criteria, which are:

1. Students
2. Program Educational Objectives
3. Program Outcomes
4. Continuous Improvement
5. Curriculum
6. Faculty
7. Facilities
8. Support

ABET Foundation's second visit report provides insights into improvements in each of the criterion listed above. As pointed out in the report, there are significant improvements in all areas since experts' visit in Fall 2017. However, attaining ABET accreditation is contingent upon demonstrating sufficient and adequate institutional support for the ABET programs. Specifically, Criterion #8, support and financial resources to allow faculty development and support services of the Departments providing ABET programs.

It should be noted that the following statements from the ABET Foundation report 2018 ABET Foundation report, May 2018, Task 1, page 4, clearly points to a total lack of support (with NO PROSPECTS!):

1) Assess whether institutional financial support is adequate and sustainable to support the vision and the capacity building needed in the STEM programs.

- As indicated in (a) above, **there is no reason to expect that institutional financial support would be adequate or sustainable to support the programs, given the low levels of government support for public universities and the low tuition that can be charged**. It appears that both GTU and TSU must rely on external sources of support to make the laboratory improvements that are needed, and there is no evidence that there will be sufficient continued support for maintaining and upgrading the facilities without continued external support.

2) Assess what resources are in place to ensure long-term operations and maintenance of infrastructure, facilities and equipment.

- This result is the same as that for (c) above. **Given that external support has been required for renovation, upgrading, and establishing new laboratories at three of the four programs reviewed, there is no basis for expecting that sufficient resources to ensure long-term operations will be available.**

The above two observations of the ABET Foundation will "short-circuit" the whole ABET initiative in the partner universities. Unless the above are properly addressed and support is insured, partner universities' Readiness Report (due October 1, 2018) CANNOT be submitted.

As these are factors EXTERNAL to SDSU's control, SDSU cannot help but bring these to the attention of MCA and MCC for immediate action. A letter of assurance from the MES to partner universities with specific support commitments may help alleviate above concerns. Such a letter may need to be included in the TSU ABET Readiness Reports (for CompSci and for EE) , when it is submitted to ABET before the deadline of October 1, 2018.

4. PART TWO: ACS

Tbilisi State University – SDSU Georgia joint B.Sc. program in Chemistry/Biochemistry will have its first graduates in June, 2019. Certification of a standalone TSU Chemistry program by American Chemistry Society (ACS) will happen after the TSU-SDSU program is transitioned to TSU.

ACS Certification timeline for an independent ACS-certified B.Sc. in Chemistry:

Track record must be “demonstrated” before ACS application or reviews start, i.e.

- All 4 Years taught by SDSU-G (May 2019 Graduation)
- All 4 Years taught by Georgian colleagues (May 2021 Graduation)
- Each required course taught is an ACS milestone
- Each major instrument installed is an ACS milestone (NMR, need elevator)
- Must have strong and continued support from TSU for
- Faculty/staff (experience, CV, hours/week taught, etc.)
- Facilities and infrastructure, e.g., elevator
- Instrument, service contracts, consumables
- All areas of chemistry taught in lectures and labs, Analytical, inorganic, organic, physical, etc.

SDSUG started preparing for the independent standalone TSU Chemistry program certification on February 9, 2018 by asking a TSU rector’s office to form a TSU ACS certification committee. TSU has formed a working committee for ACS certification. Program certification is planned for 2021. Members of TSU ACS Committee are as follows:

1. Aleksander Tsiskaridze – Deputy Rector of TSU
2. William Tong – Distinguished Professor of SDSU
3. Ramaz Khomeriki – Dean of Faculty of Exact and Natural Sciences
4. Nunu Ovsyannikova – Head of Administration of TSU
5. Dimitri Kordzaia – Dean of Medical Faculty
6. Ramaz Gakhokidze – Professor, Bio Organic Chemistry Department
7. Omar Mukbaniani – Professor, Macromolecular Chemistry Department
8. Shota Samsonia – Professor, Organic Chemistry Department
9. Giorgi Ghvedashvili – Head of Department of Scientific Research and Development
10. Bezhan Chankvetadze – Professor, Physical and Analytical Chemistry Depertment
11. Magda Alania – Associate Professor, Head of Quality Assurance Service

12. Giorgi Burjanadze – Assistant Professor, Faculty of Exact and Natural Sciences
13. Giorgi Jibuti – Assistant Professor, Faculty of Exact and Natural Sciences
14. Nino Kokiashvili – Senior Scientific Researcher, Faculty of Exact and Natural Sciences
15. Ana Goletiani – Invited Expert.

This committee was formed under the leadership of the provost, Alexander Tsiskaridze and is co-chaired by Professor William Tong. Prior to this SDSUG formed a ACS student chapter and several of ACS student chapter officers attended ACS annual meetings with a grant from ACS headquarters, also supported by SDSUG. First meeting of the TSU ACS committee took place on May 3, 2018 at TSU. This kick-off meeting was also attended by Dean Halil Guven, Walter Oechel, and Douglas Grotjahn.

Projected timeline for the ACS standalone accreditation below:

ACS Certification Timeline	2017				2018				2019			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Establishment and recognition of the ACS Student Chapter	X	X										
Travel grant received from ACS HQ for SDSU-G Student Chapter			X									
SDSU-G ACS Student Chapter (Nino) attended ACS National Meeting in Washington			X									
Discussions with ACS HQ in Washington including a new ACS Chapter for the Region			X	X	X	X						
Travel grant received from ACS HQ for SDSU-G Student Chapter					X							
SDSU-G ACS Student Chapter Officers (Ani and Nino) attended ACS National Meeting in New Orleans					X							
Started ACS Committee with TSU					X							

leaders												
First ACS Student Chapter sponsored Symposium at TSU						X						
SDSU-G ACS Student Chapter Officers to attend ACS National Meeting in Boston							X					
NMR and other major instruments installed							X	X				
All 4 years of courses taught by SDSU-G									X	X	X	X
All 4 Years of courses taught by Georgian colleagues (2021) and submit ACS Certification application												→