



The Executive Summary Report on Quality Assurance for The Academic Year 2013



Quality Assurance Subdivision
Academic Affairs and Innovation
Suranaree University of Technology

Foreword

This self-assessment report is compiled for the purpose of analyzing and reporting the performance of Suranaree University of Technology (SUT) using the indicators and criteria set for that purpose by the Office of the Higher Education Commission (OHEC) and Suranaree University of Technology during the academic year 2013 (May 2013 - April 2014). This report is intended for SUT and its stakeholders, especially the advisory board and the public in order to develop a higher level of quality and educational standards for the university.

Suranaree University of Technology has realized the significance of educational quality assurance and began doing it in the 1998 academic year, aiming to create a quality organizational culture within the university with the system and mechanism for educational assurance matching the university policy of “Centralized Services, Coordinated Missions.” In the academic year 2013, SUT has implemented the educational assurance according to the assessment criteria for higher education “group D”, Research Universities with major emphasis on advanced research and production of quality graduates especially at the doctoral level. In doing this, SUT has used all 23 OHEC indicators, included 18 indicators, set out by the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) and incorporated 8 SUT indicators, making it a total of 10 components with 49 indicators covering all factors affecting the university’s quality: input, process and output/outcome.

For the academic year 2013, SUT has implemented educational quality assessment both at a departmental level during

June 26-July 8, 2014, and at an institutional level during July 30-August 1, 2014. The appointed Educational Quality Assessment Committees consisted of external and internal distinguished scholars and experts. In addition, the university has organized an annual QA Forum, aiming to identify issues, brainstorm, exchange, and develop mutual understanding, and awareness of the value of educational quality assurance. From these ongoing activities, the university has taken into account its assessment results in determining SUT policy in order to strengthen its distinctive features, and, based on the indicators, corrected those features in which it is behind. Moreover, each individual unit of SUT has developed a plan; based on the weak points of its self-assessment and quality assurance process; in order to improve and correct performance in its development. This leads to concrete implementation and optimal achievement, resulting in the improvement and development of quality educational management in a more efficient, effective and ongoing manner, corresponding to the National Education Act B.E. 2542 (1999) and Amendments (Second National Education Act B.E. 2545 (2002)).



(Professor Dr. Prasart Suebka)

Rector

Suranaree University of Technology

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Report on Quality Assurance for Academic Year 2013

Executive Summary

Suranaree University of Technology (SUT) is Thailand's first public autonomous, non-bureaucratic university in the form of a "government-supervised university", with its own administrative system based on the principle of "Centralized Services, Coordinated Missions". According to Suranaree University Act 1990, the university is administered under the supervision of SUT council.

Suranaree University, specializing in teaching and research in the areas of science and technology essential for national development, has realized the significance of educational quality assurance and implemented it in an ongoing manner since the academic year 1998. At the beginning, the university developed its indicators in accordance with mission for undergraduate level management. In academic year 2007, the university adjusted its indicators to make them consistent with the indicators set by the Office of the Higher Education Commission (OHEC) for "group D", Research Universities with major emphasis on advanced research and production of quality graduates especially at the doctoral level). Since academic year 2011, the university has integrated all 23 OHEC indicators on input and process, 18 indicators, set by the Office for National Education Standards and Quality Assessment (Public Organization) (ONESQA) on output/outcome

and 8 SUT indicators, resulting in a total of 49 indicators under 10 components covering all factors affecting the university's quality which are input, process, and output/outcome. Such quality assurance indicators are as follows:

1. Component 1: Philosophy, Commitments, Objectives, and Implementation Plans (3 indicators)
2. Component 2: Graduate Production (16 indicators)
3. Component 3: Student Development Activities (2 indicators)
4. Component 4: Research (6 indicators)
5. Component 5: Academic Services to Society (5 indicators).
6. Component 6: Preservation of Arts and Cultures (3 indicators)
7. Component 7: Administration and Management (7 indicators)
8. Component 8: Finance and Budget (1 indicator)
9. Component 9: System and Mechanism for Quality Assurance (2 indicators)
10. Component 11: Technology Adaptation, Transfer, and Development (4 indicators)

The university has implemented its educational quality assurance according to the OHEC's indicators for "group D", Research Universities with major emphasis on advanced research and production of quality graduates especially at the doctoral level). consisting of 10 components and 49 indicators. The following is a summary of the educational quality assurance's results:

Overall Results of Educational Quality Assurance

1. The performance results based on quality assurance
 - 1) According to the criteria of internal quality assurance (OHEC indicators), the university got an average of 4.87 out of 5, which was 97.40% on its self-assessment, (with 22 out of 23 indicators meeting the standards). The performance results were at a “very good” level in terms of quality.
 - 2) According to the criteria of internal and external quality assurance and performance results of the university (the integration of the OHEC, ONESQA, and SUT indicators), the university got an average of 4.65 out of 5, which was 93.00% on its self-assessment (with 39 out of 45 indicators meeting the standards). The performance results were at a “very good” level in terms of quality.
 - 3) According to the criteria of internal and external quality assurance the integration of the OHEC and ONESQA indicators), the university got an average of 4.85 out of 5, which was 97.00% on its self-assessment (with 33 out of 37 indicators meeting the standards) The performance results of the university were at a “very good” level in terms of quality.

Remark : The ONESQA indicators 15-18 (the total of 4 indicators) were included in the assessment but excluded from the calculation because they are associated with uniqueness/identity of individual university.

2. The performance results based on the self-assessment score of each indicator

1) According to the self-assessment score of each indicator, it was found that the performance of 45 indicators was classified as “distinctive features” (indicators that meet the standards (with a score of 4 or higher)).

2) According to the self-assessment score of each indicator, it was found that the performance of 2 indicators was classified as “weaknesses” (indicators that should be improved in order to meet the standards (with a score below 3)). These two indicators were added according to the criteria of SUT indicators which were:

(1) Indicator 2.9 Percentage of dismissed students who failed to meet the minimum academic standard per cohort
a. undergraduate level

(2) Indicator 2.10 Percentage of undergraduate students graduating on time in each cohort

3. The performance results based on Balanced Scorecard (BSC), such indicators can be classified into 4 categories which are Students and Stakeholders Indicators, Internal Process, Finance, and Human Resource, Learning, and Innovations. The results indicated that: According to the Students and Stakeholders, there were two indicators that should be improved in order to meet the standards. They are:

1) Indicator 2.9 Percentage of dismissed students who failed to meet the minimum academic standard per cohort
a. undergraduate level

2) Indicator 2.10 Percentage of undergraduate students graduating on time in each cohort

**A Summary of Performance Results of Quality Assessment by
Components and Indicators at the Institutional Level**

| Components/Indicators | Assessment Score | Level |
|---|---------------------|-----------|
| Component 1: Philosophy, Commitments, Objectives and Implementation Plans (1 Indicator) | 5.00 | very good |
| Indicator 1.1 Plan Development Process | 5 | very good |
| ONESQA Indicator 16 Results from the Institution's Development Based on its Identities | 5 | very good |
| 16.1 The Institution Administration Results that Have Become the Identities * | | |
| 16.2 The Graduates Development Results Based on the Identities * | 4.24 | good |
| ONESQA Indicator 17 Results from the Institution's Development Based on its Focuses and Strengths Reflecting the Institution's Characteristics * | 5 | very good |
| Component 2: Graduate Production (16 Indicators) | 4.19 | good |
| Indicator 2.1 System and Mechanism for Curriculum Development and Administration | 4 | good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|---|------------------|-----------|
| Indicator 2.2 Full-Time Instructors Holding a Doctorate Degree | 5 | very good |
| Indicator 2.3 Full-time Instructors holding an academic position | 3.11 | fair |
| Indicator 2.4 System for Faculty and Supporting Personnel Development | 5 | very good |
| Indicator 2.5 Library, Educational Equipment and Learning Environment | 5 | very good |
| Indicator 2.6 System and Mechanism for Teaching and Learning Management | 5 | very good |
| Indicator 2.7 System and Mechanism to Develop the Educational Achievements According to Graduate Characteristics | 5 | very good |
| Indicator 2.8 Success Rate of Morality and Ethics Edification for Students | 5 | very good |
| <i>Indicator 2.9 Percentage of Dismissed Students Who Failed to Meet the Minimum Academic Standard per Cohort ★</i> | 2.53 | Fair |
| <i>a. undergraduate level</i> | | |
| <i>b. graduate level</i> | 3.62 | good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|---|------------------|------------------|
| <i>Indicator 2.10 Percentage of Undergraduate Students Graduating on Time in Each Cohort ★</i> | 2 | need improvement |
| <i>Indicator 2.11 Students' GPAX ★</i> | | |
| <i>a. undergraduate level</i> | 3 | fair |
| <i>b. graduate level</i> | 4 | good |
| ONESQA Indicator 1 The Graduates with Bachelor's Degrees Who Have Jobs within One Year | 4.31 | good |
| ONESQA Indicator 2 Quality of the Graduates with any Academic Degrees Reaching the National Standards of Thai Qualifications Framework for Higher Education | 4.20 | good |
| ONESQA Indicator 3 Works (Including Papers) Created by the Graduates with Master's Degrees, which Have Been Published or Disseminated | 5 | very good |
| ONESQA Indicator 4 Works (Including Papers) Created by the Graduates with Doctoral Degrees, which Have Been Published or Disseminated | 5 | very good |
| ONESQA Indicator 14 Professional Development | 4.56 | very good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|--|------------------|------------------|
| Component 3: Student Development Activities (2 indicators) | 5.00 | very good |
| Indicator 3.1 System and Mechanism to Provide Information Advice and Services | 5 | very good |
| Indicator 3.2 System and Mechanism to Promote Student Activities | 5 | very good |
| Component 4: Research (6 indicators) | 4.97 | very good |
| Indicator 4.1 System and Mechanism to Develop Research or Creative Work | 5 | very good |
| Indicator 4.2 System and Mechanism to Manage the Knowledge Gained from Research or Creative Work | 5 | very good |
| Indicator 4.3 Funds for Research or Creative Work per Full-Time Instructor/Researcher | 4.79 | very good |
| ONESQA Indicator 5 Published or Disseminated Research or Creative Works | 5 | very good |
| ONESQA Indicator 6 Useful Research or Creative Works | 5 | very good |
| ONESQA Indicator 7 Quality-Accredited Academic Works | 5 | very good |

| Components/Indicators | Assessment Score | Level |
|---|------------------|------------------|
| Component 5: Academic Services to Society (4 indicators) | 5.00 | very good |
| Indicator 5.1 System and Mechanisms for Academic Services to the Society | 5 | very good |
| Indicator 5.2 Academic Service Process for the Benefits of the Society | 5 | very good |
| ONESQA Indicator 8 Results from Applying Knowledge and Experiences Involving Academic Services for Teaching/Learning and Research Development | 5 | very good |
| ONESQA Indicator 9 Results from Learning and Strengthening Local Communities or External Organizations | 5 | very good |
| ONESQA Indicator 18 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats 18.1 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats in Issue 1 (Inside the Institution) * | 5 | very good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|--|------------------|------------------|
| 18.2 Results from the Institution's Solving Social Problems, Recommending for Improvement, or Protecting Society from Threats in Issue 2 (Outside the Institution) * | 5 | very good |
| Component 6: Preservation of Arts and Culture (3 indicators) | 5.00 | very good |
| Indicator 6.1 System and Mechanism for the Preservation of Arts and Culture | 5 | very good |
| OHESQA Indicator 10 Promotion and Supporting Arts and Cultures | 5 | very good |
| OHESQA Indicator 11 Developing the Aesthetics of Arts and Cultures | 5 | very good |
| Component 7: Administration and Management (7 indicators) | 4.77 | very good |
| Indicator 7.1 Leadership of the Institution Council and Administrators at all Levels of the Institution | 5 | very good |
| Indicator 7.2 Institutional Development towards Learning Institution | 5 | very good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|---|------------------|------------------|
| Indicator 7.3 Information Systems for Administration and Decision-Making | 5 | very good |
| Indicator 7.4 Risk Management System | 5 | very good |
| <i>Indicator 7.5 Satisfaction of Service Receivers on “Centralized Services, Coordinated Missions” ★</i> | 4 | good |
| OHESQA Indicator 12 Performance of Institution Council in its Designated Roles and Responsibilities | 4.90 | very good |
| OHESQA Indicator 13 Performance of Institution Administrators in Regard to their Roles and Responsibilities | 4.48 | very good |
| Component 8: Finance and Budget (1 indicator) | 5.00 | very good |
| Indicator 8.1 System and Mechanism for Finance and Budgeting | 5 | very good |
| Component 9: System and Mechanism for Quality Assurance (1 indicator) | 5.00 | very good |
| Indicator 9.1 System and Mechanism for Internal Quality Assurance | 5 | very good |
| OHESQA Indicator 15 Internal Assessment Results Approved by the Supervisory office | 4.87 | very good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|--|------------------|-----------|
| Component 10: 3D Policy for Educational Institutes (2 indicators) (Since the Academic Year 2013, there has been no need to report the performance results of this component) Source: OHEC | - | - |
| Component 11: Technology Adaptation, Transfer, and Development (4 indicators) | 5.00 | very good |
| <i>Indicator 11.1 System and Mechanism for Technology Adaptation, Transfer, and Development in Compliance with the University's Goal ★</i> | 5 | very good |
| <i>Indicator 11.2 Percentage of Full-Time Lecturers Participating in Suitable Technology Adaptation, Transfer, and Development for Full-Time Lecturers ★</i> | 5 | very good |
| <i>Indicator 11.3 Percentage of Activities/Projects in Technology Adaptation, Transfer, and Development Appropriate for Full-Time Lecturers ★</i> | 5 | very good |
| <i>Indicator 11.4 Satisfaction of Service Receivers on Technology Adaptation, Transfer, and Development ★</i> | 5 | very good |

Remarks:

1. * refers to excluded indicators for calculation
2. ★ refers to SUT indicators added to the OHEC and ONESQA indicators
3. the average scores 0.00-1.50 = need immediate improvement, 1.51-2.50 = need improvement, 2.51-3.50 = moderate, 3.51-4.50 = good and 4.51-5.00 = very good

| Components/Indicators | Assessment Score | Level |
|--|------------------|-----------|
| Self-Assessment Score for the 23 Indicators of OHEC | 4.87 | very good |
| Self-Assessment Score for the 14 Indicators of ONESQA | 4.82 | very good |
| Self-Assessment Score for the 8 Indicators of SUT | 3.92 | good |
| Self-Assessment Score for the 45 Indicators of OHEC, ONESQA, and SUT | 4.65 | very good |
| Self-Assessment Score for the 37 Indicators of OHEC and ONESQA | 4.85 | very good |

Developmental Implementation in Response to the Appraisal Results

Students

Realizing the importance of developing quality students, Suranaree University of Technology and all its departments have continuously developed measures to support and encourage students learning achievements. According to the 3-5 year-data, students' qualifications tend to be improved, that is, there is a decrease in the number of dismissed undergraduate students and an increase in their grade point averages and in the number of students' graduation within the normal time scale.

To achieve these goals, the following measures and supports have been regularly implemented, revised, developed and improved by the university.

Input Measures

1. The university should publicize news and information that reflect the university's strengths and identities, for examples, its alumni news, students/personnel who provide benefits for society or are recipient of awards at the international and/or national level, innovations and research works of its students/alumni/personnel through various channels such as print media, the SUT website, radio and television so as to make SUT's strong reputation more visible.
2. The university by Institute of Engineering has continuously organized proactive public relations by publicizing undergraduate admissions in the form of camps at schools and the university to promote its image and to attract students with excellent academic records to study at SUT.

3. The university has publicized its curriculum to attract high potential students in the form of video interviewing successful alumni who advanced in their careers and current students with high academic achievement..
4. The university has allocated various scholarships such as Development and Promotion of Science and Technology Talents Project (DPST) Scholarships for Honors Program students and Scholarships in Celebration of the 84th Birthday Anniversary of His Majesty the King for outstanding students in various fields in order to attract more potential students.

Process Measures

The SUT Academic Affairs and Innovation, the Teaching Development and Support of Learning Affairs, the Student Affairs and the Institutes have cooperated in solving the academic performance's problems of the students, for example the problem of a students' GPAX being lower than the university target (GPAX 2.41: Set Target \geq 2.50), the academic dismissal rate of undergraduate students who failed to meet the minimum academic standard per cohort is higher than the university target (percentage of 12.42: Set Target $<$ percentage of 5), the academic dismissal rate of graduate students who failed to meet the minimum academic standard per cohort is higher than the university target (percentage of 1.72: Set Target $<$ percentage of 1), and the lower graduation rate of undergraduate students within the time schedule per cohort (percentage of 46.06). The followings have been implemented in order to solve such problems.

1. The university has developed systems and mechanisms for assisting and following at risk students in dismissal and in failing to graduate within the normal time frame/scale. In doing this, the university can resolve students' academic problems and can study and analyze such problems more in-depth.
 - 1) The roles of undergraduate advisor have been expanded to provide academic guidance and life counseling for students.
 - 2) The students' academic problems have been studied and analyzed for concrete and direct causes and solutions through institutional/classroom research projects, for example the research project on Methods for Solving Learning Problems of SUT Students with Low GPA by the Institute of Medicine.
2. There is a system and mechanism for assisting students that is aligned with the university's administrative philosophy of "Centralized Services and Coordinated Missions", for connecting related university units, such as the Institutes, Center for Educational Services and Division of Student Affairs. In addition, the university has encouraged students to participate in various activities organized by the Institutes/ the university to support teaching and learning, for example:

- 1) Training programs for SUT freshmen on Techniques for Studying in Higher Education Institutions, with purposes in providing them the university's information, preparing and motivating them to become anxious learners.
- 2) Basic science knowledge preparation camps on Fundamental Physics, Mathematics, Chemistry, and Biology for all first year undergraduate students, both quota and admissions.
- 3) Projects on Enhanced Teaching and Learning Potential in Physics 1 by using their Physics post-test's scores from the preparation camp to group students for Physics 1 classes.
- 4) Preparation Projects for Assisting Students with Low Academic Outcome organized by Division of Student Affairs and the Institutes, e.g. tutoring classes, tutoring between senior and junior and tutoring at students' dormitories.
- 5) An offering of courses with high failing rate being run more than once in a academic year in order to provide students chances for registration and passing the exam, thus might accelerate their graduation.
- 6) An offering of more sections for courses that have a lot of students registered in order to lessen the number of students in each group and to strengthen the teaching and learning effectiveness.

Faculty

Suranaree University of Technology and its related units have continuously provided support and encouraged an advancement of the faculty in both teaching and researching in various aspects, for examples:

- 1) A development of Mentoring System of Knowledge as an academic mentor for new faculty members, implemented by Faculty Development Academy.
- 2) An exchanging research knowledge and teaching/learning experiences among faculty members through activities organized by Faculty Development Academy with an aim to support and develop teaching efficiency.
- 3) The Individual Development Plan: IDP appointed by the Institutes and Schools in order to follow up the career advancement of faculty members continuously and in a concrete manner.
- 4) A support system for group research by the Institute of Research and Development and the Institutes through various forms of research funding allocation, e.g. research funds for research centers, research groups, and research units or research laboratories, as well as scholarships for graduate students whose lecturers are awarded research funding by outside sources (OROG), resulting in producing more areas of research works and academic outputs.
- 5) The continuity activities organized by Faculty Development Academy and Division of Personnel to provide regulations and procedures in appointing academic titles.

Results of Educational Quality Assurance by Components at the Institutional Level (Academic Years 2011-2013)

Component 1 : Philosophy, Commitments, Objectives and Implementation Plans

1. SUT has an annual operation plan and various projects that comply with its missions and vision as well as the national strategy, and that can respond to both internal and external changes. Besides that, there were the strategic plans that accord with SUT's missions, vision, and university council's policy, the 11th National Economic and Social Development Plan (2012-2016), the 2nd revision of the Strategic Plan for Higher Education Reform, and the Second 15-Year Long Range Plan on Higher Education (2008-2022).
 - 1) The 10-Year of the University Development Strategic plan (2012-2021), the 11th Phase of Suranaree University Development Plan (2012-2016), and the Annual Action Plan-Fiscal year 2013 have been implemented through routine operation and projects. For example, the recruitment plan to attract high-ability students, the projects concerning the university's preparation for the ASEAN Community, the sufficient funding allocation for students, including the analysis of the effects of using proactive public relations for students recruitment to increase more high potential students, and the analysis of the effects of the ASEAN Community to prepare SUT for the ASEAN Community.

- 2) The university has applied the Delphi technique to develop the online strategic assessment for the 11th Phase of the Suranaree University Development Plan (2012-2016). Such assessment is carried out every fiscal year by the university administrators, with results used for improving the university plans and projects. In addition, the university plans have been formulated with the involvement and co-operation agreement of the university's personnel and with the consideration of different university's aspects, e.g. vision, strategic, objectives, goals, and strategies. The plan is disseminated to every work unit within the university with assigned responsible persons.
2. The university has employed measures or methods for following, auditing, and appraising its achievements at the unit and personal levels to be in accordance with the annual action plan. These measures have been concretely and clearly implemented. There is a committee responsible for carrying out a follow-up of budget utilization and stimulate operations specified in the action plan every quarter. Besides, there is a committee from the University Council to follow, audit, and assess the university's performance twice a year. In addition, the follow-up and assessment according to the educational quality assurance system have been performed annually while an internal audit has been carried out four times a year with its results used for SWOT analysis. The university also has a Risk Management System which is assessed by the Office of the Auditor General of Thailand once a year.

Component 2 : Graduate Production

1. The university uses proactive approach in publicizing its curriculum in various forms: the Educational Marketing Exhibition, SUT Curriculum Public Relations for Target Schools, and using information technology, e.g. social media, to reach the target group. Besides, the university by Institute of Engineering has continuously implemented proactive public relation for undergraduate admissions in different schools and organized camps at schools and the university to promote its image.
2. The university has taken measures for attracting more students with excellent academic records by allocating scholarships for undergraduate and graduate levels. There are Scholarships for Outstanding Undergraduate Students, Scholarships in Celebration of the 84th Birthday Anniversary of His Majesty the King, the Academic Olympiads Camp, Scholarships for students participating in the Development and Promotion of Science and Technology Talents Project (DPST) to study in the Honors Program, Scholarships for students participating in the Promotion of Academic Olympiads and the Development of Science Education Foundation (POSN) to study in the Honors Program, Her Royal Highness Princess Maha Chakri Sirindhorn Scholarships, Scholarships for Students in the Southern Border Provinces of Thailand, SUT Athletic Scholarships, Scholarships for outstanding students in music and dance, the SUT-Ph.D. Scholarship Program for ASEAN (nine scholarships granted to students of higher education institutions in ASEAN countries), Scholarships for outstanding students to study in a graduate program, Thesis Support Funds (30,000

baht for a Master's Degree and 50,000 baht for a Doctoral Degree) and funding in support of academic paper presentation (3,000 baht/person/year), Graduate Scholarships for university faculty who have been granted outside research funding and SUT-Ph.D. Scholarship for university faculty in support of Ph.D. production.

3. The university has implemented training programs on Techniques for Study in Higher Education Institutions and basic science knowledge preparation camps for all SUT first year students to adjust themselves to the university life and to adapt their basic knowledge in physics, mathematics, chemistry and biology. Moreover, their post-test's scores of Physics were used to classify students for Physics 1. In addition, many Institutes organized the activity "Preparation Course Project for Assisting Students with Low/Fail Camp's Post-test and with weak academic performance" throughout the academic year. The Student Affairs also managed tutoring classes at Learning Center and students' dormitories, including extra classes, taught by graduate students or teaching assistants, for undergraduate students having problems understanding lessons during class time.
4. The university has followed the students' learning outcomes and uses the results of the students' evaluation of instructors' teaching performances to adjust teaching and learning constantly and with concrete results.
5. The university has carried out institutional research to investigate issues in developing teaching and learning, discovering the causes of learning problems and identifying solutions for teaching, for example:

- 1) Large-classroom learning
 - 2) Factors affecting SUT students' learning achievements in certain courses
 - 3) Causes of program dropouts in first year SUT students
 - 4) Comparison of students factors affecting four-year completion rate and over four-year completion rate
 - 5) The study of academic achievement of re-entry students in academic year 2006.
 - 6) SUT identities from the perspectives of the SUT community, student counselors, parents, and students
 - 7) Research articles on "The Development of Structural Models for the Retention of Suranaree University Students," and "The Relationships among High schools and University Records and the Entrance Examination Scores of the Suranaree University Students, Academic Year 1997-2000".
6. The university aims to produce graduates possessing "in-depth, well-rounded and practical knowledge". To achieve this goal, the university has teaching and learning system focusing on learning by doing. In addition, the university has developed modern and standardized curricula by adding innovative courses emphasizing on an application of theoretical knowledge into practice, thus satisfying the needs for desirable characteristics of the graduates at an international level and in ASEAN community. For examples, adding the undergraduate cooperative education curriculum, opening the first graduate cooperative education curriculum and providing selected topics in graduate courses.

7. The university has conducted a needs analysis for the new curriculum. A public hearing and the assessment of its current curricula have been conducted to adjust and develop curriculum that is suitable for education and the direction of national development.

8. Implementing the Cooperative Education Training System at undergraduate and graduate levels increased the employment rate and salary of SUT graduates. In addition, the university has received awards at a national level and an international level as evidenced by:

1) The 2010 Nationally Distinguished Educational Institution for Implementing International Cooperative Education Award, from OHEC and Thai Association for Cooperative Education.

2) The 2010-2011 Distinguished Cooperative Education Administrators in National Educational Institutions (Prof. Dr. Prasart Suebka), from OHEC and Thai Association for Cooperative Education.

3) The 2013 Distinguished Cooperative Education Person in Educational Institutions for Lower Northeast Network for Cooperative Education Development (Asst. Prof. Dr. Sunitiya Thuannadee, School of Management Technology).

In addition, the university has been recognized at an international level through its appointment as a satellite office in the Asian region for the World Association for Cooperative Education (WACE).

9. The university has a faculty and research mentoring system.

10. The SUT Teaching Support Unit to Faculty Development Academy has organized various trainings programs related to teaching techniques such as student-centered learning, large-classroom learning, life-long learning, and deep and active learning to increase students' satisfaction with faculty's teaching as well as to sustain faculty's need to develop high-quality teaching.
11. The university provides support for faculty holding Master degrees to pursue their studies at the doctoral level, with internal and external scholarships and sabbatical leave.
12. The university has more faculty members holding Doctoral degrees and maintains its standard in recruiting high potential lecturers by implementing a teaching test, a teaching evaluation, and a performance appraisal. The university has also supported intellectual personnel with moral support in the form of awards such as an excellent teaching award, an outstanding research award, and an innovation of excellence award.
13. The university supports faculty of higher academic rank by encouraging and providing support for conducting quality research, implementing One Instructor One Product Project, adjusting payment for faculty's academic rank, publication of research articles in international academic journals, and publication of textbooks and teaching materials.

Component 3 : Student Development Activities

1. The university supports various kinds of academic activities for undergraduate and graduate students through its annual plans and Institutes and Schools budgets.
2. The university places an importance on students' development in various aspects. Thus, there are variety of student clubs focusing on organizing activities/projects to promote SUT students' intellect, society, ethics and morality that are aligned with the five preferable characteristics of the graduates according to standard qualifications at the higher educational level: 1) knowledge, 2) cognitive skills, 3) interpersonal skills and responsibility, 4) numerical analysis, communication and information technology skills, and 5) ethics and moral. These traits are corresponded with the four desirable SUT students' characteristics, as follows:
 - 1) Humanware or being able to interact with others happily and successfully, having good interpersonal relation, ethics and moral, and responsibility, as well as respecting the rules of society
 - 2) Orgaware or having a leadership quality in directing its organization and staffs to achieve shared goals, being able to act as a leader and a follower, knowing how to create, implement, and assess plans.
 - 3) Infoware or being good at learning, searching, and disseminating information. According to a globalization era, the faster and the more information you get, the more advantages you have.

- 4) Technoware or becoming scholars in their field, with real enthusiasm for learning, knowledgeable in technology application and development. Development of graduates' preferable characteristics is promoted and supported through the university's budget, resources, facilities, and personnel. In addition, the assessment results of each activity are used to improve the quality of future activities.
3. The university supports the International Cooperative Education in preparing for ASEAN Community-ACT by organizing a Collaboration in International Cooperative Educational Development among members of ASEAN Community Project, Improvement and Supports on English and Cultural Skills Project, Language and Culture for ASEAN Economic Community Project, International Voluntary Camp and ASEAN Youth Leaders Camp, and by providing work opportunities in ASEAN member countries to Cooperative Education students, for example.
4. The university has placed importance on students who have good academic records and those who achieve outstanding performance in sports, to be a role model for other SUT students. In doing this, the university has granted scholarships, certificates for students with outstanding activities, and awards for excellent sporting achievement.
5. SUT has realized the importance of its alumni, thus the university academic institutes have regularly organized SUT Alumni Relations Program in the university and outside. In addition, SUT alumni from many Schools, School of Metallurgical Engineering, School of Mechanical Engineering and School of Civil Engineering for example, have established education funds for students with limited money.

Component 4 : Research

1. SUT has been selected as one of the nine National Research Universities despite being the youngest university, thus indicating a great development in a short period of time.
2. The university motivates its faculty members to produce more quality research work at national and international levels, through various measures such as the provision of matching funds, and the development of a research support infrastructure. In addition, there has been support for research activities through various internal funding sources. These include the SUT Research and Development Fund and Her Royal Highness Princess Maha Chakri Sirindhorn Innovation and Invention Fund, which emphasize high quality research work leading to innovation and invention. The university has also initiated standard measures in determining instructors/researchers' work load by equating their teaching loads with research loads. Instructors who conduct significant amounts of research teach less. Moreover, the university has a system to support group research. As a result, more research works have conducted through support funds, Research Centers, group research and research units or research labs in order to become center of excellence, and through Scholarship Awarding to Graduate Students whose Lecturers are Awarded Research Funding by Outside Source (OROG) for example.

3. There are various applied research outputs as follows:

- 1) **Institute of Science** High Efficient Electrospinning System for Producing Nanofiber and Nanostructure, the Development of Microorganisms for L-Lactic and D-Lactic Acid Production from Cassava, Microstructure of Material Specification and Novel Material Research.
- 2) **Institute of Agricultural Technology** SUT Poultry and Korat Broiler Chicken Development, Korat Wagyu Beef Cattle Development, Employing Useful Bacteria to Stimulate Cassava Immunity against Late Blight, Sex Reversal of Nile Tilapia, Low Calories and High Fiber Alginate Gel Product, Bakery Products and Resistive Starch Made from Thai Rice, Development of Bacillus and Trichoderma Products in Plant Disease Control, Rhizobium and PGR for Soybean Growing against Global Warming, Micro-biotic Seeding Technology for Reducing the Fish Sauce Fermenting Duration, Preparing Dense and Fermented Food for Goats Diets, Producing Organic Fertilizer and Chemical Organic Fertilizer from Local materials, Mixing Co-enzyme Q10 in Rice Bran Oil Process, Ready to Brew Black Sesame Powder Product, Ready to Eat Eri Silkworm Pupae Production Process, Production Process of Orange and Lemon Power with Spray Drier and Freezer, Suranaree 473 Sunflower Breeder Seed, Bedtime Milk, the Production System Development of Organic Acid and Solvent in the Industrial Level, Thai Herbal Treatment for Erectile Dysfunction in Men.

3) **Institute of Engineering** High-Frequency Rice Weevil Exterminator Machine, Bat Repelling System Using High Frequency Wave, Environmentally Friendly Mosquito Larva, CLC Lightweight Concrete Production, Biopolymer Container Production for Hot and Cold Food, Plastic Waste to Fuel Oil Conversion Machine Using Microwave Frequency, Research and Development on the Prototype of Infectious Waste Treatment Using Plasma-Arc Technology, the Mini Prototype Ethanol Production, the Prototype Waste to Alternative Energy in the Communities (to handle 3-5 tons of waste per day), the Three-Ring Compaction and Direct Shear Testing Mold, Intelligent Traffic Light System Model, Intelligent City Management System, Position-Reporting GPS System Using GPRS Network, Landmark Voice-Report System, Vehicle Speed Detector, Low Temperature Stoneware Product.

4) **Institute of Nursing** PREG-Cal Version 2.1 for Computing Length of Pregnancy and Projected Delivery date.

4. Division of Asset Management in cooperation with Technopolis were assigned to manage the university's intellectual property management since fiscal year 2013 in order to promote the commercial utilization of SUT's research, innovations and innovations such as the Serisin Protein from Silk Cocoon Production Process, Mini CLC Lightweight Concrete Production Set, High Performance Engineered Woods Development, and Bedtime Milk.

5. The university provides funds to support faculty's research presentations both in Thailand and abroad, making SUT researchers and the university become well-recognized and playing major roles on the international stage, as evidenced by an increasing number of invited speakers and keynote speakers from SUT instructors/researchers or by those taking part in the organization of international academic conferences held abroad and hosting international academic conferences in Thailand or at SUT.
6. The university encourages faculty members to publish their research articles in well-accepted journals in their fields and pays a financial bonus to those whose research article is published in national and international journals, based on the quality of the research and the journals.

Component 5 : Academic Services to the Society

1. There is a university policy on the development of University Engagement and Social Enterprise under the operation of Technopolis in disseminating research and innovations of faculty members and students to the community and industry through University Social Responsibility: USR Project.
2. Technopolis has implemented the proactive academic service system as a “one stop service” where there is a connection between public and private sectors, and an academic cooperation with SUT institutes. The Thai Counselors Project has been concretely carried out to provide counseling for both public and private sectors as evidenced in Energy and Environmental Counselors Project for example.

3. The university has provided community services ranging from community and local levels to national and international levels, by transferring bodies of knowledge, faculty expertise and experience, as well as technology developed into implementation in industrial sectors to people, community and society. For example, SUT 32 Districts 32 Doctors Project; Promotion of Academic Olympiads and the Development of Science Standards Project; Science Classroom in University Affiliated School Project (SciUS); Academic and Scientific Camp; Development of Enterprise Quality Systems and Management. Development of Industrial Human Resource Potential; Agricultural Potential Development; and Laboratory Service namely Thailand Industrial Technology Assistance Program (iTAP), Suranaree University of Technology; Suranaree University Network of Technology Clinic; Suranaree University of Technology Business Incubation Unit (SUTBI); Laboratory Service Unit; and the Cassava and Products Research Center, Suranaree University of Technology. In addition, the university has promoted a policy that encourages executives, faculty members, and staff in the support sections to collaborate in community services in order to strengthen power of the community. To achieve such purpose, the university has continuously organized activities to promote relationships within SUT nearby communities and the Nakhon Ratchasima province, such as hosting the University Games of Thailand, co-hosting The SEA Games and Higher Education Network in the Lower Northeast.

Component 6 : Preservation of Arts and Culture

SUT participates in promotion and support of Thai arts and culture through variety of activities and services on campus and out of campus, for example:

- 1) On-campus/off-campus activities-WaiKhru (paying respect to teachers) Ceremony; Traditional Thai music and dance guru worship; Traditional Thai music and dance training, Arts & culture youth camps; Loy Krathong Festival; Yamo festival; Baisri Sookhwan (a regional welcoming ceremony for new students); Rod Nam Dam Hou, Songkran Festival (Thai New Year); Tod Krathin and Tod PhaPhaa (making merit), Regional Thai Kite Competition; and the promotion of the ASEAN nations cultures of the (ASEAN week@library) activities.
- 2) On-campus/off-campus Community services-Thai Studies and Anthropological Collection Room that collects and disseminates knowledge of northeastern arts and cultures; the Ancient Thai Technology Museum that displays thousands of ancient Thai technological tools useful for educational purposes and development ancient knowledge; Local information room, Nakhon Ratchasima, consisting of collections of Nakhon Ratchasima' information; and Nakhon Ratchasima Network (NARINET) of Center for Library Resources and Educational Media, which provides NakhonRatchasima' s local knowledge information services.

3) There is SUT work that is nationally recognized, “The Lam Takhong Water Wheel”, Thai Studies and Anthropological Collection Room, which was published in the book “Using knowledge to fight crisis” (page 53-55) at the 3rd Local Museum Festival, Princess Maha Chakri Sirindhorn Anthropology Center (Public Organization). In addition, a SUT medical student received the Outstanding Manners Award for a Medical Student presented by Medical Council of Thailand, academic year 2012.

Component 7 : Administration and Management

1. The university has adjusted its administrations structure by appointing Vice Rector for University Community Organization Engagement Affairs to be responsible for the University Engagement particularly for coordinating, promoting, implementing/developing projects or activities between SUT and the community organizations. By conjointly thinking and working together for mutual benefits, a favorable influence can be objectively assessed by both the community and the university playing a role as an “ally of society”. The university also appointed Vice Rector for Teaching Development and Support of Learning Affairs to carry on the university missions to promote and develop instructors’ teaching and using technology to enhance learning. This lead to having graduates equipped with knowledge, moral ethos and wisdom, who become societal reliance.

2. There is a risk management plan covering plans for internal control improvement, where there is a follow-up by the Internal Audit Unit. The assessment results, remarks and suggestions from SUT Council together with the remaining risks and new risks to adjust or analyzed a risk management plan for the next fiscal year.
3. The university has developed a Management Information System (MIS) for continuous use, with an emphasis on sustainable self-development. The SUT-MIS Database Unit takes direct responsibility for MIS and publicizes its use for effective administration and management to university faculty and personnel.
4. The university has developed a system and mechanism for collecting and reporting data according to the quality assurance criteria, in order to be able to use such data on-demand. In doing this, the SUT-MIS has developed an information system for generating online Self-Assessment Reports (SAR online) for university units and institutes. This system is convenient for the educational quality assessment committee from the Office of the Higher Education Commission (OHEC) and the Office for National Education Standards and Quality Assessment (ONESQA) to get access to the implementation results according to the quality assurance indicators. In addition, the university administrator can look at the implementation and assessment result of all the university units at any time. All university units have been entering data through the SAR online system since academic year 2012.

5. Four University Councils (STOU, SUT, WU, TRU) and SUT have implemented activities for encouraging the Happy Workplace. This is to promote participation of the personnel, to make them love their works and organizations, to strengthen their good relationship and their collaboration on solving problems and efficiency of work.

Component 8 : Finance and Budgeting

1. There is a financial strategic plan from the Fiscal Years 2013-2016 that is aligned with SUT's 5 Years Action Plan (2012-2016) and SUT' 11th Development Plan (2012-2016) to support budget utilization and allocation in achieving and reflecting vision, objectives and mission of the university.
2. There is a Division of Asset Management to monitor and follow up the management of the university' assets including current assets, fixed assets, and intellectual property for the utmost efficiency and effectiveness, as well as for income to manage the university with flexibility.
3. The financial information of the university has been continuously used for the analysis of expense, financial status, and stability of the university. They are total expenditure per number of full-time equivalent students, fixed assets per number of full-time equivalent students and the percentage of net income in proportion to the operation budget.
4. The university is becoming more self-sufficient. While the government fund seems to decline, the university's income is increasing.

Component 9 : System and Mechanism for Quality Assurance

1. SUT has an internal quality assurance system for editing and assessing performance at the institutional level and unit level, by distinguished experts, from both internal and external institutions.
2. The internal and external quality assessment results are used for improving the university's performance, thus leading to the improvement of the weak indicators or the University's implementation plan. In addition, there is a utilization of assessment results for formulating the University's plan. There is also quality assurance committee to analyze the internal and external quality assessment results and to plan with associated work unit for monitoring and reporting the university's operations based on its quality assessment results to the rector.
3. The university has disseminated its quality assurance system through the university's website (<http://www.sut.ac.th/qa/>).
4. The Student Affairs and the Academic Affairs and Innovation have organized a workshop on Educational Quality Assurance for SUT students.
5. The university has a system to support the establishment of networks for educational quality assurance between internal and external organizations, by having SUT's educational assurance system under the administrative system of "Centralized Services, Coordinated Missions". Additionally, the university has taken part as a member of Educational Quality Assurance Networks, as evidenced by an educational quality

- assurance committee of public universities' rectors meeting, a focus group of public universities' rectors meeting and the C-Internal Quality Assurance (C-IQA) for higher education network in the lower northeast
6. The university has participated in Education Criteria for Performance Excellence: EdPEX of the Office of the Higher Education Commission (OHEC).
 - 1) The Institute of Social Technology was selected by OHEC to join EdPEX (2009-2010) and was also selected to participate in the fast track #2
 - 2) The Institute of Medicine was chosen by OHEC to participate in EdPEX #3 (2013-2014).

Component 11 : Technology Adaptation, Transfer, and Development

1. SUT has carried out technology adaptation, transfer, and development through the Technopolis in order to coordinate and provide support for faculty to exploit their knowledge and experience in offering academic services, as follows:
 - 1) iTAP: Industrial Technology Assistance Program
 - 2) SUTBI: Suranaree University of Technology Business Incubator
 - 3) SUTSP: Suranaree University of Technology Science Park
 - 4) RCaP: Research Center for Cassava and Products
 - 5) Technology Clinic Network of Suranaree University of Technology
 - 6) SUT-IPMO: Suranaree University of Technology Intellectual Property Management Office
 - 7) 32 Districts 32 Doctors Project

2. There are 15 external organizations of cooperative network for Technology Adaptation, Transfer, and Development, which have potential in disseminating research works to society. They are the Industrial Promotion Center Region 6, Korat Tapioca Cluster (DOTAC), Farmer Network for Korat Chicken Breeding, Lam Phra Phloeng Agriculture Cooperative Limited, Plant Genetic Conservation Project Under the Royal Initiation of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG), Nam Pung Dam Power Plant in Sakhon Nakhon.
3. The University provides Technology Adaptation, Transfer, and Development services in the forms of training, seminars, and consultation with agricultural groups, community enterprises and entrepreneurs. There were 211 activities/projects such as Wisdom Development to Innovations Project; Ignite Creativity Camp (I.C. Camp) on “Extended Development of Wisdom Products through Innovations and Intellectual Property in Brand Building”; Consultation and Follow-up Field Trip to the 32 Districts 32 Doctors Project, Suranaree University of Technology; Solving community’s problems (Improving Soil Quality with Gypsum/ Raising Pigs/ Drip Irrigation System); Training on “Promotion for Raising Korat Broiler Chicken and Farming #1”; Production of Incinerator of 250 kWh Biomass Gasification Project; and organizing the Korat Wagyu Beef Cattle Development Conference for customers of Bank for Agriculture and Agricultural Cooperatives, Nakhon Ratchasima.

4. The university has been widely accepted in society and has many major activities such as the 32 Districts 32 Doctors Project, Control of Cassava Mealybug Campaign cooperative effort with Department of Agriculture; Promotion the Use of Ethanol E85 as Alternative Energy Project; Drip Irrigation for Vegetable Home Garden Project (Technology Transfer).
5. The university has various forms of research output: inventions, and innovations for concrete development and problem solving of the nation, for example:
 - 1) **Examples of contribution to help flood victims** Mosquito larva eradication, Solar powered drinking water filters, “Life-Saving Boat” for flood victims, Disposal of flood debris for assistance to the flood victims.
 - 2) **Examples of contribution to develop and increase agricultural productivity** The Development of SUT breeds and Korat Broiler Chickens and Korat Wagyu cattle (Japanese Black Cattle) pedigrees, Reducing fish sauce fermentation duration using micro-biotic seeding, Surimi freshwater fish products, Bakery products and resistive starch made from Thai Rice, Alginate Gel, the Development of instant reformed rice for functional food, the Design of modified atmosphere packaging and prediction of fresh vegetable and fruit shelf life to enhance value for agricultural products, Planting vegetables and fruit without soil (or hydroponics), Preparing concentrated and fermented goat diets,

Mushroom cultivation and processing, Fertilization and soil for cassava cultivation, Remedy of Streptococcosis outbreaks in Nile tilapia, Biogas pool construction, High-frequency rice weevil exterminator machine, Employing useful bacteria to stimulate cassava immunity against late blight, Producing and using of Bio-organic fertilizer, Azolla & BOF-System of Rice Intensification, SRI.

- 3) **Examples of contribution to conserve energy and preserve environment** Poly-hydroxyl alcanoate biodegradable plastic (PHA) from cassava starch, oil from plastic waste producing machines by using microwave and heat transferred via UHT aluminum foil cartons, High efficiency small waste incinerator, comprehensive community waste management for use as a renewable energy, an Intelligent traffic light system that coordinate light signals using GPS.
- 4) **Examples of research outcomes for health care** Phage antibody for the use in fungus toxic contamination from screening, the making of enzyme deodorizing spray, the use of synchrotron light to confirm the development of stem cells into liver cells, Medical Imaging Software for Diagnosis and Medical Research for the use in hospital radiology department, Pregnancy Age Computing and Delivery Determining (PREG-CAL) Program on a Mobile Device, Standard public utilities in Nakhon Ratchasima for elderly construction models.

6. Developed research outcomes for commercial utilization are as follows:

- 1) Smart red-box processing software, version 2.0
- 2) Smart city, version 1.0
- 3) Imaging software for medical diagnosis and research
- 4) Germinated brown rick milk formula
- 5) High-capacity engineering wood production
- 6) CLC lightweight concrete production
- 7) Bedtime milk

Results of Quality Assessment by Components at Institutional Level

Executive Summary

The university's self-assessment results in academic year 2013 achieved an overall level of "very good", with total assessment scores as follows:

| Types of Indicators | Assessment Results | | Assessment Level |
|--|--------------------|--------------------|--------------------|
| | Academic Year 2012 | Academic Year 2013 | |
| Average of OHEC indicators (23 indicators) | 4.83 | 4.87 | very good (better) |
| Average of ONESQA indicators (14 indicators) | 4.77 | 4.82 | very good (better) |
| Average of SUT indicators (6 indicators + 4 sub-indicators) | 3.71 | 3.92 | good (better) |
| Average of OHEC + ONESQA + SUT indicators (43 indicators + 4 sub-indicators) | 4.57 | 4.65 | very good (better) |
| Average of OHEC + ONESQA indicators (37 indicators) | 4.80 | 4.85 | very good (better) |

In consideration of SUT's self-assessment results, the overall operational results in accordance with the university's mission indicate the following:

Philosophy, Commitments, Objectives, and Implementation Plan

The university has clearly set out its philosophy, commitments, objectives, and implementation plan. The university has a good system for follow-up, investigation, and assessment and its assessment results can be used for further operational improvement, thus, resulting in excellent development of the university, as shown in the assessment results of Component 1 with the score of 5, indicating a very good level.

As SUT's overall quality assessment results according to the OHEC and ONESQA assessment frameworks have achieved a very good level for many years, the university should set its goal to be a university recognized at the international level, set its indicators for achieving such a goal, and adjust the assessment system that is appropriate and aligned with the new goal.

Graduate Production

The university has a successful mechanism for curriculum development and administration, a library, educational equipment, learning environment, as well as system and mechanism for teaching and learning. In addition, there are qualified full-time instructors holding academic titles, a system for faculty and support personnel development, including an effective system for nurturing students. SUT graduates have also produced much research works. As shown in the assessment results

of Component 2, it has the score of 4.19, according to OHEC, ONESQA and SUT indicators, attaining a good level and of Component 3, it achieved the score of 5, according to OHEC indicators, getting a very good level.

However, the university should clearly determine the numbers and qualifications of new students for admission in order to reduce problems associated with students outnumbering the institutes' capacity, and the problem of high dropout rate due to unsuccessful academic performance of students per cohort. This results in the incapability of thoroughly monitoring students, an insufficiency of resources, and a heavy workload for the academic personnel.

Research

The university has developed a committee structure and organization to administer and supervise its research policy. These are able to set up policy, allocate budget, and promote research output effectively, resulting in an increase in research cooperation and research output of the university's faculty. According to the assessment results of Component 4, it has a score of 4.97, according to the OHEC and ONESQA indicators, attaining a level of very good.

The university, however, should set a target for increasing the standards of research works related to regional development to the international level in a concrete manner. This can be achieved by maintaining the university's vision of societal reliance together with producing new researchers to replace the ones who are going to retire. In addition, there should be a system to support high-potential retired researchers to conduct their research works continuously and for a long time.

Academic Services to Society

The university has a systematic mechanism for providing academic services to the community, starting from conducting need analysis of the community, where there are Technopolis, Research Departments, Institute of Agricultural Technology, and SUT Farm directly responsible for providing academic services. Thus, reflecting its administration based on true needs and with effective implementation plan. SUT academic services have received high recognition at the provincial and the regional levels, as well as from the people and entrepreneurs for its benefits to society, as evidenced in the assessment results of Component 5 which were stated to be at a very good level, score of 5, according to OHEC and ONESQA indicators.

Knowledge system on academic services should be used among services units in a concrete manner to strengthen an effectiveness of their services that conform to community problems, for example Project for Establishing Waste to Energy Plant.

Preservation of Arts and Culture

The university has effectively implemented its preservation of arts and culture as evidenced in the assessment results of Component 6 which attained a very good level, score of 5 in according to OHEC and ONESQA indicators.

Nonetheless, the university should participate in continual promotion, support, and dissemination of Thai arts and cultures to be organizational culture.

Administration and Management, Finance and Budgeting, Quality Assurance

There are members at all levels of the University Council and administration with outstanding leadership records who administer the university. In addition to the establishment of knowledge units, risk management and the implementation of the university are highly satisfactory. The university also has a solid quality assurance system and systematic operation.

It has served as a prototype of a successful Learning Organization. There are clearly concrete research works from experiences, lesson learned, assessment of the body of knowledge, such as Cooperative Education that leads to graduate cooperative education curriculum for master and doctoral degrees. In addition, there is an IT system for teaching and learning that covers various value chain of educational management using IT as a tool.

The university has received an assessment result at a very good level, the score of 4.77 according to OHEC, ONESQA and SUT indicators, and attained a very good level with the score of 5

To increase the efficiency of the university's administrative systems, the assessment committee has suggested more university's risk, for example, risks caused by rapid growth and great expansion of the university, risk of generation gap, legal risk resulting from stricter rules and regulations of the government, and risk associated with competition in higher education that may lead to loss of high potential personnel and students.

Technology Adaptation, Transfer, and Development

The university has implemented technology adaptation, transfer and development that have in effect been commercialized and solved many societal problems, resulting in high recognition and acceptance from communities and regional leaders. According to the assessment result of Component 11, it achieved a score of 5 on SUT indicators which was at a “very good” level.

Nevertheless, the transfer of SUT’s Strategic Financial Plan to work units is not perfectly done, particularly with the Business Incubation Unit. The university therefore should establish a clear procedure for transferring its Strategic Financial Plan to the Business Incubation Unit that benefits the risk analysis of the work units.

The present assessment results of the quality assessment committee were evaluated from evidence of SUT self-assessment, an interview of participants in and out of the university, and a visit to the university units.

The quality assessment committee hopes that the assessment results and suggestions of the present assessment will be useful for the university’s development in the future.

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