AUN-QA

SELF-ASSESSMENT REPORT

ELECTRICAL ENGINEERING PROGRAM

DEPARTMENT OF ELECTRICAL ENGINEERNING

COLLEGE OF ENGINEERING TECHNOLOGY

December 15, 2012

COLLEGE OF ENGINEERING TECHNOLOGY
Deaprtment of Electrical Engineering
Can Tho University
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LIST OF ABBREVIATIONS

ABET	-	Accreditation Board of Engineering and Technology
AUN	-	ASEAN University Network
CoET	-	College of Engineering Technology
CTU	-	Can Tho University
DoEE	-	Department of Electrical Engineering
EEP	-	Electrical Engineering Program
ELOs	-	Expected Learning Outcomes
LRC	-	Learning Resource Center
MD	-	Mekong Delta
MOET	-	Ministry of Education and Training
PS	-	Programme Specification
PSC	-	Program Structure and Contents
PLC	-	Programmable Logic Controller
QAT	-	Quality Assurance Team
QATC	-	Quality Assurance and Testing Center
TOEIC	-	Test of English for International Communication
SA	-	Student Assessment

Table of Contents
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DAAD Deutscher Akademischer Austausch Dienst
German Academic Exchange Service

HRK German Rectors' Conference
The Voice of the Universities

DIES

AQAN
ASEAN Quality Assurance Network

ENQA

ASEAN University Network

SEAMEO RIHED

SELF-ASSESSMENT REPORT
ELECTRICAL ENGINEERING PROGRAM

We hereby confirm to approve this Self-assessment Report of Electrical Engineering Program of College of Engineering Technology to be officially accredited with AUN standards within the framework of ASEAN-QA project.

Dr. NGUYEN CHI NGON

Dean

College of Engineering Technology

BỘ GIÁO DỤC VÀ ĐÀO TẠO
TRƯỜNG ĐẠI HỌC CẦN THƠ

Assoc. Prof. Dr. HA THANH TOAN

Rector

Can Tho University

I. INTRODUCTION

1. CAN THO UNIVERSITY (CTU)

Established in 1966, Can Tho University (CTU) is an important public higher education institution and a cultural, scientific and technical center of the MD and Viet Nam with about 41,346 undergraduate students, 2,341 Master students, and 124 Ph.D candidates. CTU has got 1,969 staff including 1,190 teaching staff and 779 supporting staff. From a university with a few fields of study at the beginning, it has developed into a multidisciplinary university. Currently, it has 87 undergraduate training programs (including 02 college programs), 33 Master and 09 Doctoral training programs. Every year CTU receives students on internship programs from the U.S, Belgium, Japan and so on, or under agreements between their universities and CTU.

1.1 Mission of the university:

Mission of the university is by offering high quality educational programs, CTU focuses on training, conducting scientific research, and transferring technology to advance socio-economic development of the MD region.

1.2 Vision of the university:

CTU's strategic vision to 2020 is to not only become the best university in Vietnam, but to be recognized throughout Asia-Pacific as a leading institution in education, research, and development. CTU will expand human knowledge and benefit society through its research, teaching and strategic partnerships, all the while developing itself within the framework of global integration and mutual cooperation.

2. COLLEGE OF ENGINEERING TECHNOLOGY (COET)

In 1977, the Faculty of Agricultural Engineering and Water Management was established with 54 staff members. The College of Engineering Technology (CoET) was founded in 1995 by merging the Faculty of Water Management and Land Improvement with the Faculty of Agricultural Engineering. Currently, CoET has got 217 staff including teaching staff and supporting staffs.

Table 1: Undergraduate programs in engineering

1. Manufacturing Engineering	2. Bridge and Road Engineering	3. Hydraulic Engineering
4. Food Processing Engineering	5. Control Engineering	6. Chemical Engineering
7. Transportation Engineering	8. Electronics and Communication Engineering	9. Electrical Engineering
10. Building Engineering	11. Computer Engineering	12. Mechatronics
		13. Industrial Management

CoET has an enrollment of 5,000 undergraduate students. CoET has 07 departments and 03 centers, 38 laboratories and 01 workshop room. In the future, CoET concentrates its efforts on improving the qualities of undergraduate and graduate training; perfecting the management systems; investing the facilities; improving the qualifications of training and research of staff, and comprehensively speeding up international cooperation.

Mission:

Mission of CoET is deploying 03 functions: Education, Research and Technology Transfer and provides high quality teachers, researchers and experts at graduate and postgraduate levels to service socio-economical development in Mekong Delta area.

Vision:

Vision of CoET will be recognized as one of leading engineering colleges in Vietnam. Training and educational qualification is reaching to National and International standards in 2020.

At Can Tho university, Quality Assurance activities has began in 2003. CTU and CoET fulfill Mission and Vision, so it is very necessary to establish Internal Quality Assurance system at 02 levels. Table below shows the total result of External Accreditation (EA) at university level according to 10 standards of MOET in 2006.

Table 2: *Results of External Accreditation, level* ***1&2, 2006***

Pass level / Evaluate	Level 1	Level 2	Standards no evaluation
EA in 2006	9	44	0
Rate %	17%	83%	0%

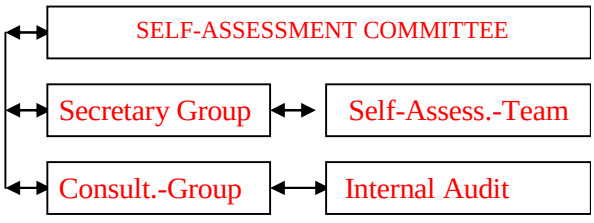
And Results of self-assessment of study programs from 2008 up to now

Table 3: Total number of programs with self-assessment

Academic year	Prog/2008	Prog/2009	Prog/2010	Prog/2011	Prog/2012
Standards of MOET	15	15	x	x	External Assessment
AUN Criteria	x	12	16	11	10+2/AUN-DAAD

Under CTU Rector's Decision N^{o}384/QĐ-ĐHCT, April 12, 2006 about setting up QAC and Rector's Decision, N^{o}: 42/QĐ/ĐBCL-ĐHCT, October 8th, 2008 for full autonomous power *in QA activities at college level* and Rector's Decision, N^{o}: 892/QĐ/ĐBCL-ĐHCT, March 28th 2012 for use of Internal Quality Assurance System of AUN Model **at college level**. In CoET there is QA team, from 2008 up to now, CoET has had 12 study programs assessed under AUN standards.

Figure 1: Self-Assessment Organization



Under Rector's Decision, No: 3832/QĐ/ĐHCT, Nov. 28th 2011 for assessment of Electrical and Engineering Program under AUN-DIES-DAAD Project (attached list of Self-Assessment (SA) Committee, Members of SA Team, Members of SA Consultant Group, Internal Audit Group, Members of Secretary Group. PAP and SAR.

3. DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering (DoEE) was founded in 2000. Currently, it has 21 staffs including 20 teaching staffs and 01 supporting staff and approximately 500 undergraduate students.

Mission:

Mission of the Department of Electrical Engineering is to support the mission of the College of Technology and Can Tho University through teaching, researching and transferring engineering activities and to provide the best undergraduate electrical engineering education. The goal is to provide students with a strong theoretical foundation, advanced professional

knowledge, practical skills, experience in interpersonal communication and teamwork, ethics and research and development, and graduate study.

Vision:

Vision of the Department of Electrical Engineering is to become the best Department of Electrical Engineering in MD region. The electrical engineering program will be reaching to National and International standards in 2020.

4. PROGRAM EDUCATIONAL OBJECTIVES

Graduates of the Electrical Engineering program will: engage in professional practice in electric power, energy system, Industrial Power, Power-plant operation; promote innovation in the design, research and implementation of products and services in the electrical engineering area through strong communication, leadership and practical skills; engage in life-long learning.

5. PROGRAM OUTCOMES

CoET has designed course expected learning outcomes in course specifications and output standards. They are all described/based on ABET (The Accreditation Board for Engineering and Technology). So at the time of graduation, undergraduate students in Electrical Engineering will achieve 03 knowledge blocks: general, fundamental and professional knowledge (ELOs, 1.1, page 4)**.**

At the time of graduation, undergraduate students in Electrical Engineering will have:

a) Knowledge

- **Social and political knowledge and sciences**: These subjects may make it possible for students to know the way and the policy of the Communist Party and Vietnamese State, fundamentals of Marxist and Leninist theory, and Ho Chi Minh Ideology. Moreover, students may achieve basic knowledge about Vietnamese Law, National Defense Education and social skills fitting specialized knowledge. Students have to have a sense of well-being to build and protect Vietnamese Country.
- **Natural scientific knowledge:** Students may apply knowledge about Maths and Physics for supporting specialized knowledge. In addition, the natural scientific knowledge exposes students to continue postgraduate levels.
- **Fundamental knowledge:** The basic knowledge helps learners be capable of designing, doing experiments in lab, proceeding and analyzing data in such professional areas as Electrical Material, Electromagnetism, basic measurements of electricity, optic and mechanics, electrical measurement, electric circuit and electric machines…
- **Specialized knowledge:** Specialized knowledge is to provide students with professional knowledge about: operation of electrical devices, power plant, transmission line, power supply system, electrical load system, lighting system, lightning protection system, electrical industrial system, protection and automation and safety of electrical engineering, optimizing the economy of power system, using electrical energy effectively and economically, producing electrical power from renewable and clean energy sources. Graduates of EEP have ability to planning, operating, maintaining, repairing, and protecting for the power-plant, substation, transmission system, distribution system, lighting system, power supply, Industrial Power, etc.
- **Information Technology knowledge:** Students may apply Microsoft Office (MS Word, MS Excel, Window, Internet) and professional software as AUTOCAD, PowerWorld, Ecodial 3, Maxwell SV, Luxicon, PLC (Programmable Logic Controller), etc
- **Foreign languages:** Graduates have English level equivalent to TOEIC (400), being able to read and write English in Electrical Engineering.

b) Skills

- Learners are trained to for necessary skills, such as planning, operating, maintaining, repairing, and protecting for the power-plant, substation, transmission system, distribution system, lighting system, power supply, Industrial Power, etc
- Graduates may propose and deploy solutions for managing electrical energy, saving energy, optimizing the economy of power plant, power system and power supply.
- Operating, maintaining, repairing electrical devices, AC and DC machines, industrial and commercial transformers

c) Attitudes

- Graduates will be good citizens, have a sense of responsibility to their career and be conscious of improving themselves, self-studying and researching methods and independent working or in pair or group.
- Graduates are of capacity to work scientifically, knowing how to analysis and solve practical problems in electrical fields, achieving thinking and argument skills.

d) Positions and working place after graduating

Education training facilities, Researching Institutes in electrical field, Department of Trade and Industry, Industrial areas, Industrial company and factory; Thermal Power Plant, Consulting firm, Design and Construction of power, Power company.

e) Graduates' Ability at life-long learning

- Graduates have ability to continue graduate levels in such electrical fields as power supply, power plant, electrical devices and power grid…
- Doing specialized research in electrical fields such as Electrical Engineering, Power System.

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II. AUN-QA CRITERIA AT PROGRAM LEVEL

1. EXPECTED LEARNING OUTCOMES (ELOs)

Expected learning outcomes are obligation requirements that students have to achieve at graduated time by incremental attainment over duration of courses. Basing on mission, vision *(Exh.01.01) of* Can Tho University and College of Engineering Technology, and Program objectives ELOs are clearly designed with feedback of stakeholder satisfactions. ELOs are covered on knowledge and intellectual, practical and transferable skill over 3 knowledge blocks of program and help student to have right directions and awareness for self studying in learning process. ELOs are popularized among the lecturers, students and different stakeholders via meetings at the department level, Can Tho University's catalog of curriculum at university and college levels, media and website *(Exh.01.02, Exh.01.04)* of the College and University, and updated periodically in the last years.

1.1. The expected learning outcomes have been clearly formulated and translated into the program

- ELOs of Electrical Engineering are clearly formulated, basing on program outcomes of ABET (The Accreditation Board for Engineering and Technology) (Exh.01.03) COET inserts adding points: l and m:

a). "Apply knowledge of mathematics through probability; differential & integral calculus; differential equations; linear algebra; complex variables; and science and engineering in the context of electrical engineering problems.

b). Design and conduct scientific and engineering experiments, as well as to analyze and interpret data.

c). Design systems in electrical area that meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d). Function in multidisciplinary teams to solve effective electrical engineering problems.

e). Identify, formulate, and solve current and emerging electrical engineering problems, including the development of preliminary estimates and final plans, specifications, and designs; and the implementation and operation of systems components and processes that meet performance, cost, time, safety, and quality requirements.

f). Understand professional and ethical responsibility.

g). Communicate effectively technical material both orally and in writing.

h). Receive the broad education necessary to demonstrate an understanding of the impact of electrical engineering solutions in a global, economic, environmental, and societal context.

i). Demonstrate a recognition of the need for, and engage in life-long learning.

j). Demonstrate knowledge of contemporary issues related to electrical engineering.

k). Use modern engineering techniques, skills, and computer-based tools for analysis and design".

l). Have sense of well-being to build and protect Vietnamese Country

m). Know the way and the policy of the Communist Party and Vietnamese State, fundamentals of Marxist and Leninist theory, and Ho Chi Minh ideology.

Table 4. The relations between ELO and Programme educational objectives

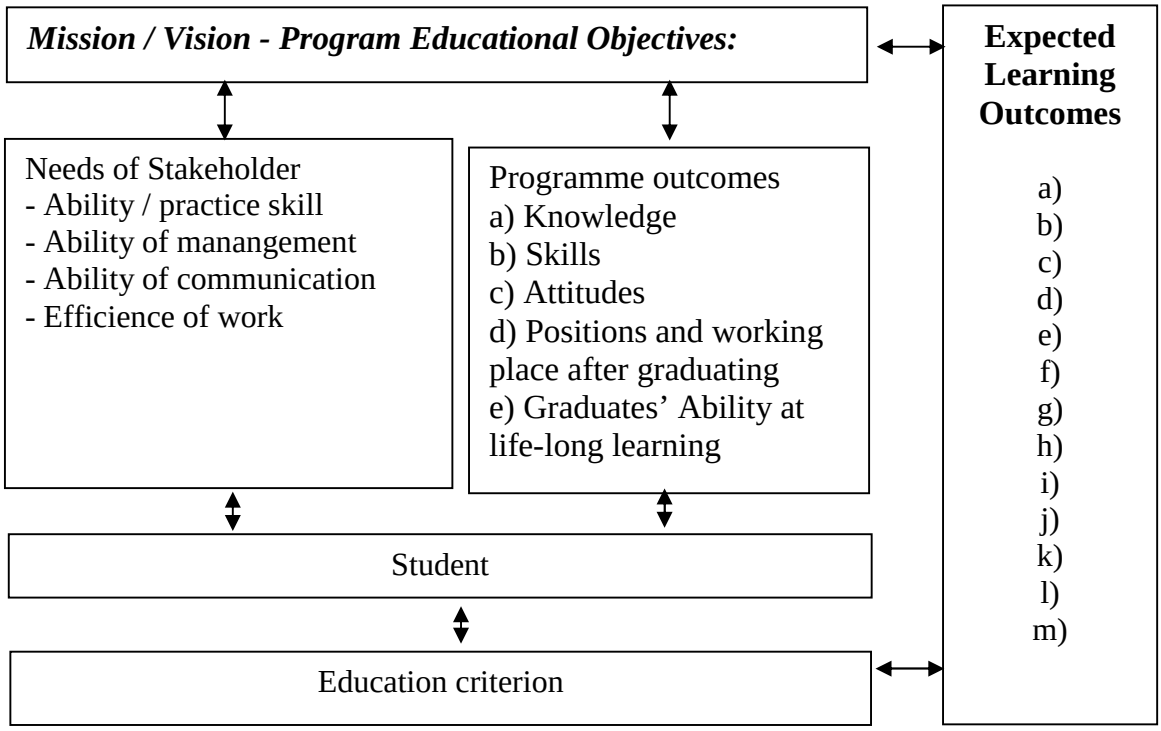
Program Educational Objectives	**Expected Learning Outcomes**
Engage in professional practice in electric power, energy system, Industrial Power, Power-plant operation	a, b, c, e, j, k

Promote innovation in the design, research and implementation of products and services in the electrical engineering area through strong communication, leadership and practical skills	b, c, d, e, f, g
Engage in life-long learning	d, h, i

ELOs are provided requirements that students know to achieve courses/general knowledge, fundamental knowledge and professional knowledge *(Exh.01.03).* Lecture and students clearly know them and to know to teach/learn and how to achieve those ELOs with individual directions before graduation.

- ELOs are clearly translated into the program via program specification, program & contents, teaching & learning strategy, staff quality, student advice and support, facilities and infrastructure, quality of teaching and learning and results of output. ELOs are covering on all courses via course intended learning outcomes (course specifications) *(Exh.01.04)* in Can Tho University's catalog of curriculum and output standards, structure and contents, syllabi and standards in teaching and learning process and student assessment under Statute No 43 of MoET, 15/08/2007 (*Exh.01.06)*

Figure2. The diagram of evaluation Programme educational objectives



1.2. The programme promotes life-long learning

Teaching for the lifelong learning, lecturers deliver to students relevant contents/methods in which students will remember, understand, use knowledge and create new ideas/production at different levels (*under Benjamin Bloom's Toxanomy*) (*Exh.01.16).* Furthermore, graduates have to receive and integrate sustainable knowledge and skills that is necessary for lifelong learning in postgraduate levels. Exactly, ELOs basically help students to receive requirements of general knowledge, basic knowledge and specialized knowledge and different skills. ELOs make students to develop their keen sense of learning. Thus, ELOs have to be a tool for motivation and they need to be improved periodically. ELOs also provide students with self-study awareness *(Exh.01.01).* The teaching and learning strategy is one of good tools to help lecturers teach, students know how to learn to achieve ELOs directly *(Exh. 04.01*). In 2010, CTU organized Workshop on 2-self studying periods/classes of students and Workshop on learning consultancy for advisors and students in 2011

and so on.

Table 5: How to teach in the lifelong learning.

Learning outcomes		Assessment criteria
The learner will understand:		The learner can
1.	Role, responsibilities in relation to teaching	Explain and identify roles and issues, key aspects, practice,……
2.	Appropriate teaching and learning approaches	Identify, justify or explain selection of teaching and learning approaches for a specific session: the policy, Maths and Physics, capable of designing, doing experiments in lab, proceeding and analyzing data, operation of electrical devices, power plant, ……
3.	Session planning skills	Identify, explain or justify such as planning, operating, maintaining, repairing, and protecting for the power-plant, substation, transmission system, distribution system, lighting system, power supply, Industrial Power,… & (practice)
4.	The use of different assessment methods and the need keeping	Identify and explain different assessment methods in different contexts. (Statute N^{o} 43 of MOET)
5.	How to deliver inclusive sessions which motivate selfthemves	learn to develop personally, establish ground rules for lifelong learning. (comment/evaluation/creation)

(under Programme outcomes (p.37&39), & Statute N^{o} 43 of MoET, 15/08/2007& National college Network,…)

Program objectives and program outcomes are to provide students a good background via general knowledge, basic knowledge and specialized knowledge, self-studying and researching methods and independent working or in pair or group. Thanks to that integration, students themselves develop and study more and more in uninterrupted changing social environment *(Exh.01.10).* Mentioned ELOs, which are under the credit-based system with adequate structure and contents, teaching and learning strategies, step by step, help students plan and find out their own right direction for learning in the future *(Exh.01.03).* ELOs also draw professional progress and the pathways with long-sighted pictures with a view to positive learning process and lifelong-learning:

- In each theory course, a percentage of 30% of the total final grade is allocated to the students' research and the development of their knowledge via project courses *(Exh.01.11);*

- Project courses in the program aim at helping students consolidate their specialized knowledge and solving specific programs *(Exh.01.12);*

- Practical courses aim at developing students' ability in group work and focusing on upgrading their specialized skills *(Exh.01.06, Exh.01.12, Exh.01.14, and Exh.01.15);*

Graduates from the program have basic knowledge in technology and engineering, which can meet the requirements for flexibility in career transferability *(Exh.01.10),* They also have the ability for self-study to upgrade their level and continue to graduate levels as described in the program standards for graduates *(Exh.01.01).*

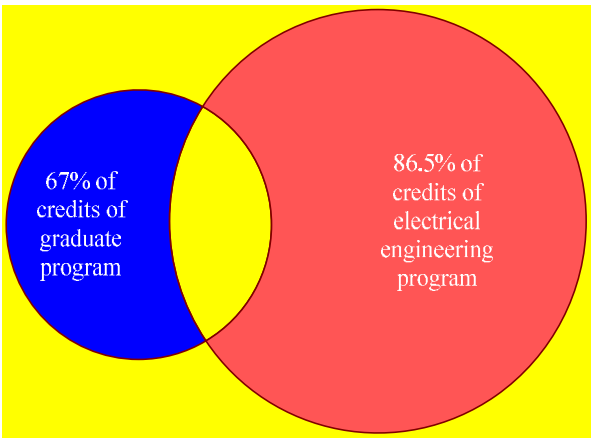


Figure 3: Relationship between structure of knowledge in Electrical Engineering Programin Can Tho Unversity and post-graduate program in Ho Chi Minh City University of Technology

Thank to the relationship of the structure and knowledge in the Electrical Engineering Program in CTU and the post-graduate program in HCMUT, after graduating the Electrical Engineering Program in Can Tho University, students are able to take post-graduate program in Ho Chi Minh University of Technology.

1.3. The expected learning outcomes cover both generic and specialized skills and knowledge

The curriculum covers both ***generic and specialized skills and knowledge*** with 3 blocks of knowledge: general knowledge, fundamental knowledge and specialized knowledge *(Exh.01.03)* to meet the comprehensive needs of society for graduates. For students' psychology, they only concentrate on specialized skills study, so ELOs are built like total common pictures for students to reach the final objectives *(Exh.01.01)*. In Program Structure and Contents and Program Specification are the common picture and total knowledge and skills of program. Besides, Teaching and learning strategy and others help students to learn how to study and to achieve and to assess student *(Exh.01.06, Exh.01.11, Exh.01.12, Exh.01.13, Exh.01.14, and Exh.01.15)*.

ELOs with obligatory in which students have to receive and apply socio-common knowledge and professional skills *(Exh.01.01)*. Graduates of EEP have ability to planning, operating, maintaining, repairing, and protecting for the power-plant, substation, transmission system, distribution system, lighting system, power supply, Industrial Power, etc. Graduates of EEP with soft skills and social-political knowledge have abilities for holding some leader and manger positions for electrical energy project to satisfy labor market. Basing on the feedback from stakeholders (labor market, lecturers, students…), ELOs are planning to be improved periodically *(Exh.01.07, Exh.01.08, and Exh.01.09)*.

Table 6: The relations between ELO and Programme structures

Programme structure		**Expected Learning Outcomes**
General knowledge		a, g, h
Attitudes		l, m
Fundamental knowledge, skills		b, g, k
Professional knowledge		c, d, e, f, h, i, j
Professional skills		c, e

1.4. The expected learning outcomes clearly reflect the requirements of the stakeholders

There are also contributive things each other between CTU and CoET and society/stakeholders. At CTU and CoET, the feedback results from stakeholders (related to Criterion 13 and Criterion 15) are used to develop and improve ELOs *(Exh.01.01)*. Quality and results of program are depended on deploying contents and receiving achievements, so ELOs want to reflect the requirements of the stakeholders *(Exh.01.07, Exh.01.08, and Exh.01.09)*. In addition, the program contents and specific courses were also

added, adjusted frequently via feedback from learners in regular meetings between the department and newly-graduated students within one year from their graduation day and students at the department *(Exh.01.10).* Moreover, the curriculum was also updated basing on the social needs thanks to ideas contributed from electrical engineers *(Exh.01.08).* However, ELOs always need to be considered to reform and close gaps periodically *(Exh.01.01).*

a) Strengths

- The curriculum always strengthens the learners in their self-study and promotes their awareness in life-long learning via results of input and both in learning process and output

- Rate of graduate's employability with satisfactory is high.

- ELOs description is referred/based on foreign standards-ABET with some adding points covering 3 knowledge blocks.

b) Weaknesses

§ Some students do not have an appropriate level of passion in the career, are not efficient in their self-study, self-research, and problem solving.

§ Activities for employability consultancy are still not adequate

§ Needs of society are always changed, but improvements of ELOs are still slow.

c) Actions

§ The college will research for methodology innovation and teaching contents and more soft-skills for in order to motivate students' passion in career, self-study and self-research.

§ Because changed social needs, so structures and contents of program want to reform and ELOs want always to improve adequately next time.

2. PROGRAM SPECIFICATION (PS)

A clear PS is using and providing stakeholder general information and main points about EEP such as ELOs and how these can be achieved, made informative, communication, and available things.

2.1 The university uses programme specification

The college has published and uses the program specification as introducing information of Electrical Engineering Program *(Exh.02.01, Exh.02.03).* The program specification which was edited and developed from the program curriculum of Electrical Engineering program, published in 2007, clearly provides stakeholders with general and main points about EEP as well. It was communicated to relevant stakeholders via document system, website of the college *(Exh.02.02).*

Programme specification consists of main parts as follow: I) General Information; II) Program description: 1) Objectives, 2) ELOs, 3) Program structure; 4) Teaching and learning methods; 5) Assessment methods, 6) Employability, 7) Graduates' Ability at life-long learning, 8) Support services for studies. COET identifies 1st area: I) General Information is about procedure of EEP; II) 2nd main area: II) Program description in which from section 1) to 6) for teaching and learning process and from section 7) to 8) for after graduation *(Exh.02.04).* Program is periodically adjusted, so Program Specification will be also updated accordingly.

2.2 The programme specification shows the expected learning outcomes and how these can be achieved

a) The expected learning outcomes are clearly shown in Part II of Program Specification Form and they are clearly formulated and translated into program in order to help stakeholders (lecturers, students, alumni, labor markets) to clearly know the program, how to learn it and how to achieve the results *(Exh.02.01).* The

program specification shows the objectives of the program as well as ELOs about knowledge, skills and attitudes, through learning subjects, teaching, learning and assessment methods *(See Exh.02.01, Section 2).*

b) Learners will understand how to learn to achieve and can explain, use things that they learnt:

- Learners will acquire block of general knowledge, basic knowledge and professional knowledge in three main specialized: Electrical System, Industrial Power and Power Supply *(Exh.02.03) and practice (Exh.0113-16).*

- Furthermore, learners will be trained for necessary skills, such as computing, foreign languages, critical thinking, communication skills *(Exh.02.04),* and research abilities *(Exh.02.05).* Moreover, learners can improve their professional skills and are able to apply scientific techniques to solve practical problems *(See Exh.02.06, Exh.01.15, and Exh.02.09).*

- Besides, graduates will be good citizens, have a sense of responsibility to their career and be conscious of improving themselves.

+ Implementation of Program Specification

- *Researching and training Committee and Rectorate Board are responsible for making decision of Program Specification.*

- COET and Department of EEP, lecturers and students are responsibility for implementation of PS.

- Department of Academic Affaires, QAC are responsibility for monitoring of PS *(Exh.02.08).*

ELOs always change and are reformed, so PS needs to plan to be improved and has some good ways to show ELOs and to achieve them.

2.3 The programme specification is <u>informative, communicated, and made available</u> to the stakeholders

The stakeholders, especially students and lecturers, must clearly know about PS by different ways, such as in meeting, workshop, on the internet and others ***(Exh.02.02).*** Clearly, if PS didn't communicate and make available to the stakeholders, at that time it is very difficult for related people to implement/deploy program because they don't exactly understand contents, structure, goals, methods and requisition how to do ***(Exh.01.03, Exh.01.05).*** The program specification provides much useful information to stakeholders:

1) General information of the program consists of name of awarding institute, entrance examination block, full knowledge of key volume, training time, mode of training, degree awarded…

2) Program description, including:

+ Goals and objectives of the program

+ Learning Outcomes

+ Program curriculum

+ Teaching methods

+ Methods of assessment

+ Job opportunity after graduation

3) Ability to study and improve upon graduation

4) Specific supports for the learning of students *(See Exh.01.05, Exh.02.07, and Exh.02.08).*

Communication of PS must timely have a good plan, better ways for updating periodically.

a) Strengths

§ The programme specification clearly explains the expected learning outcomes.

§ The programme specification is communicated to stakeholders.

b) Weaknesses

§ The program specification has not periodically been edited and updated yet.

c) Actions

§ In 2012 & 2013, the university and college will make a plan to edit and update the program specification periodically.

§ In 2012-2015, meetings between university and college leaders will be implemented to assign prerequisite courses.

3. PROGRAM STRUCTURE AND CONTENT (PSC)

PSC base on Program framework and Statute of MOET N^{o} 43/2007. Programme describes a good balance of 03 blocks, the vision and mission, achievements of ELOs, integrated courses, showing breadth and depth, course levels or thesis, and is up to date.

3.1. The programme content shows a good balance between generic and specialised skills and knowledge

Table 7: Structure of Electrical Engineering Curriculum

Knowledge		**Credits**
Compulsory	General knowledge	39 (28.9%)
	Fundamental knowledge	32 (23.7%)
	Professional knowledge	34 (25.2%)
Elective	Free elective knowledge	14 (10.4%)
	Professional knowledge	16 (11.8%)
Total		**135**

Figure 4. Structure of knowledge in electrical engineering program (EEP)

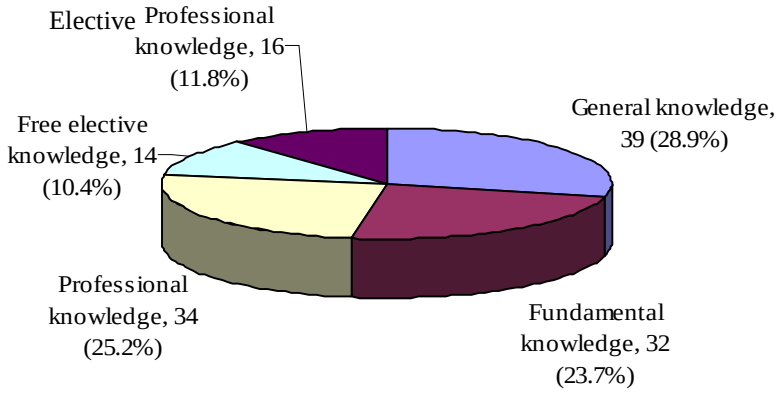


Table 8: Curriculum map of electrical engineering program

	Introduced	Reinforced	Assessed (exit level)
a). Apply knowledge of mathematics through probability; differential & integral calculus; differential equations; linear algebra; complex variables; and science and engineering in the	TN001, TN002, TN012, TN010	CT138 (lecture)	CN167, CN191, CN169, CT361

context of electrical engineering problems.	(lecture)		(lecture, practice)
b). Design and conduct scientific and engineering experiments, as well as to analyze and interpret data.	CN169	CN171, CN267, CN178 (laboratory)	CN285, CN286 (final project)
c). Design systems in electrical area that meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	CN264, CN265	CN279 (lecture, project)	CN518, CN517 (project)
d). Function in multidisciplinary teams to solve effective electrical engineering problems.	CN139, TN014, TN016, CN151, CN192, CN176 (lecture, practice)	CN518, CN517 (project), CN480, CT376 (lecture, practice)	
e). Identify, formulate, and solve current and emerging electrical engineering problems, including the development of preliminary estimates and final plans, specifications, and designs; and the implementation and operation of systems components and processes that meet performance, cost, time, safety, and quality requirements.	CN177, CN284, CN280 (lecture)	CN277, CN185 (lecture, project)	CN285, CN286 (final project)
f). Understand professional and ethical responsibility.	CN177 (lecture)	CN503 (practice)	
g). Communicate effectively technical material both orally and in writing.	CN801, CN802, CN803, or XH004, XH005, XH006 (lecture, practice)	CN158, XH019 (lecture, practice)	
h). Receive the broad education necessary to demonstrate an understanding of the impact of electrical engineering solutions in a global, economic, environmental, and societal context.	KT005, ML008, XH011 (lecture)		CN276 (seminar),
i). Demonstrate a recognition of the need for, and engage in life-long learning.	CN120 (lecture, project)	CN518, CN517 (project)	
j). Demonstrate knowledge of contemporary issues related to electrical engineering.	CN503 (practice)	CN503 (practice)	
k). Use modern engineering techniques, skills, and computer-based tools for analysis and design	CN009 (lecture), CN010 (practice)	CN271, CN133 (lecture, practice)	CN283 (laboratory)
l). Have sense of well-being to build and protect Vietnamese Country		QP001 (lecture, practice)	

m). Know the way and the policy of the Communist Party and Vietnamese State, fundamentals of Marxist and Leninist theory, and Ho Chi Minh ideology.	ML009, ML010 (lecture)	ML006, ML010, KL001 (lecture)	

Meaning of indicators

- Introduced: this subjects offers learning opportunities for this particaular intended outcome at an introductory level. On completion, students should have the foundational knowledge/ skills / attributes to pursue this outcome further.
- Reinforced: this subject will build upon student's existing knowledge/ skills / attributes in this particaular intended outcome to provide learning opportunities through which students can reinforce and/ or further develop the knowledge/ skills / attributes described in the outcome statement.
- Assessed: the attainment of this outcome will be assessed in this subject

Contents in program structure have a good balance between general knowledge, basic knowledge and specialized knowledge. Electrical Engineering Program was designed based on the curriculum of Ministry of Education and Training of Vietnam and based on Credit-based system. In designed process of EEP there is reference to EEP of Technology University of Ho Chi Minh City *(Exh.03.01, Exh.03.02)*. Graduate needs to achieve complete blocks of knowledge and skills in which there are coherence number of credits or adequate courses. They will help students have enough firm foundation of depth and large knowledge *(Exh.03.02).* The curriculum is designed with three blocks of knowledge (135 credits in total):

i) Social and political knowledge and sciences (53 credits, with 14 optional ones), including foreign languages, general laws, national defense, philosophy, Marxist and Leninist theory, physical training, maths and physics.

ii) Basic knowledge (32 credits), including courses about electric circuits, digital circuits, fundamental electronics, electromagnetic field,…

iii) Specialized knowledge (50 credits, with 16 optional ones) including advanced knowledge about Power System, Industrial Power and Power Supply *(Exh.01.03, Exh.01.04).*

Besides, the department also has a curriculum map that facilitates students in building up the Full-Course Studying Plan and having a general view of the program *(Exh.04.08).*

From labor market, their satisfaction and needs are changed, so a balance between general knowledge, basic knowledge and specialized knowledge should be updated accordingly *(Exh.03.01).*

3.2 The programme reflects the vision and mission of the university

ELOs are requirements that students clearly have to know, how to learn and how to achieve. Indeed, the ELOs achievement of graduates is the first step to achieve **aims and objectives of training activities**. So it reflects the vision and mission of the university *(Exh.03.03).* The program plays an important role in implementing the vision and mission of the university and training activities which are some of main functions of CTU *(Exh.03.03).* The goals and objectives of Electrical Engineering Program were set based on vision and mission of the university to train and provide good engineers with a strong capacity in power and electric. The program not only provides learners with scientific theories, but also trains them professional skills in power and electric and project courses to satisfy needs of socio-economic development in Mekong Delta area *(Exh.01.03, Exh.01.04).* In socio-economic development, the mission and vision are updated, so the program contents also need to be improved adequately.

3.3. The contribution made by each course to achieving the ELOs is clear

Program consists of courses/modules and results of each course make total successes of the program. It means that each Course ELO/course specification

contribution on achievement the Program ELOs is clear *(Exh.01.01)*. In CTU and CoET, Course Specification is designed like a module of Program Specification. Course ELOs are appropriately described with base on Structure and Content of Program *(Exh.01.03)* and with base on results of feedback from lecturers, students, graduates, alumni and labor market *(Exh.01.07, Exh.01.08, and Exh.01.09).* The stakeholders' feedback via evaluation results of Course ELOs clearly contributes to the achievements of ELOs via following table:

Table 9: Relation between Course ELOs and Program ELOs via rates:

(4 = very big, 3 = big, 2 = average, 1 = very small, Emty cell = not relation)

No	Subject code	Name of Subject	Credits	Learning Outcomes												
				a	b	c	d	e	f	g	h	i	j	k	l	m
1.	QP001	National Defense Education(*)	6													4
2.	TC100	Basic Athletics 1+2 (*)	1+1												4	
3.	CN801	Non-major English 1 (*)	4							4		1				
4.	CN802	Non-major English 2 (*)	3							4		1				
5.	CN803	Non-major English 3 (*)	3							4		1				
6.	XH004	Basic French 1 (*)	3							4		1				
7.	XH005	Basic French 2 (*)	3							4		1				
8.	XH006	Basic French 3 (*)	4							4		1				
9.	ML009	Marxist-Leninist Philosophy 1	2						1				2			4
10.	ML010	Marxist-Leninist Philosophy 2	3						1				2			4
11.	ML006	Ho Chi Minh Ideology	2						1				2			4
12.	ML011	History of Vietnamese Communist Party	3						1				2			4
13.	CN009	General Informatics	1	4								1		2		
14.	CN010	Practice of General Informatics	2	3								1		4		
15.	KL001	General Vietnamese Laws	2						3				1			4
16.	ML007	General Logic	2					3								
17.	ML008	General Sociology	2						4							
18.	XH014	General Documents & Archives	2											4		
19.	XH011	Introduction to Vietnamese Culture	2						4							1
20.	XH012	Vietnamese in Use	2							4						
21.	TN001	Calculus A1	3	4												
22.	TN002	Calculus A2	4	4												
23.	TN012	Linear Algebra & Geometry	4	4												
24.	TN010	Probability – Statistics A	3	4												

25.	TN014	General Physics –Mechanics & Thermodynamics	2	4	3											
26.	TN016	Fundamental Photo-Electricity	2	4												
27.	CN151	Digital Circuits	2	4	3											
28.	CT138	Advanced Engineering Mathematics	2	4												
29.	CN415	Micro – Control	2	4	3			2								
30.	CN170	Electrical Material	2	4												
31.	CN171	Practice on Material of Electrical	1		4								3			
32.	CN192	Fundamental Electronics	2	4												
33.	CN176	Practice on fundamental Electronics	1		4			2					3			
34.	CN167	Electric Circuits 1	3	4				1								
35.	CN191	Electric Circuits 2	2	4				1								
36.	CN169	Practice on Electric Circuits	1		4			2								
37.	CT361	Electromagnetic Field	2	4												
38.	CN133	Descriptive Geometry and Technical Drawing in Electrical Engineering	3	3									4			
39.	CN130	Electrical Measurement	3	4	3								3			
40.	CN444	Power Electronics	2	4				2								
41.	CN178	Practice on Power Electronics and Applications	1		4		2						3			
42.	CN139	Thermodynamics & Heat Transfer	3	4	3								3			
43.	CN501	Electric machinery 1	3	4	4			2				1				
44.	CN502	Electric machinery 2	3	4	4			2				1				
45.	CN264	Power System Analysis 1	3	4				3			1	1				
46.	CN265	Power System Analysis 2	3	4				3			1	1				
47.	CN267	Practice on Power System	1		4			2				1				
48.	CN177	Safety of Electrical Engineering	2	4												
49.	CN277	Power Generation Operation and Control	2	4				3	1							
50.	CN517	Project in Electrical Engineering	2	2			2	4				2				
51.	CN270	Practice on Electrical Engineering Skills	3	2	4								3			
52.	CN518	Project in Power System	2	2			2	4				2				

53.	CN263	High Voltage Engineering	2	4				1								
54.	CN519	Electric Drives	2	3	4	1		1						3		
55.	CN268	Relay Protection And Automation	3	4	3			1						3		
56.	CN274	Power Supply	2	4		3		2								
57.	CN503	Excursion on Electrical Engineering	1						2		4					
58.	CN271	Applied informatics in electrical engineering	2	3										4		
59.	CN272	Electric Devices	2	4												
60.	CN410	Control Engineering	2	4	3									3		
61.	CN279	Power System Design	2	2		4		2			2					
62.	CN275	Power Plant	2	4							2					
63.	CN273	Lighting Engineering	2	4		2		1								
64.	CN281	Design Electrical Devices	2	2		4										
65.	KT005	Principles of Enterprise Management	2				3				2					
66.	CN283	CAD for Electrical Engineering	3	2	2									4		
67.	CN406	PLC	2	2	2	2								4		
68.	CN158	English in Electrical Engineering	2							4		1				
69.	XH019	French for scientific & technological Purposes	2							4		1				
70.	CN278	Refrigeration Electrical Engineering	2	4		2		1								
71.	CT376	Industrial Electronics	3	3	4	2								2		
72.	CN480	Technologically Electricity	2	4				1								
73.	CN280	Power System Stability	2	4	2			1						2		
74.	CN185	Power System Planning	2	4		4		1					2			
75.	CN284	Power System Reliability Evaluation	2	4				2					3			
76.	CN120	Scientific Research Methods and Report Writing	1				2					3				
77.	CN276	Seminar on Electrical Engineering	2	4			2			2	1					
78.	CN285	Minor Graduation Thesis	4	4	2	2				1						
79.	CN286	Graduation Thesis	10	4	2	2				1						

Program periodically needs to use feedback results from stakeholders and to increase quality of teaching and learning strategy and others to help student to achieve Course ELOs and Program ELOs *(Exh.01.07, Exh.01.08, and Exh.01.09).*

3.4 The programme is coherent and all subjects and courses have been integrated

Like 3.1. The programme content shows a good balance between generic and specialised skills and knowledge. Clearly, table 9 above also expresses that the programme is coherent and all subjects and courses have been integrated *(Exh.01.03)***.** Three skills and knowledge blocks are adequately designed in structure and content of program, so they demonstrate logical and integrated relations of program and they supplement each other *(Exh.01.03)*. The curriculum is based on credit-based system, so learners can decide what specialized knowledge they want to learn. The courses are arranged in a logical series of knowledge and most specialized courses are tied with other prerequisite courses *(Exh.01.05).* MOET also provides with outline/diagram of courses *(Exh.03.02)* and they help students to design learning plan with general view for program in which there are information of relation between 03 knowledge blocks. In Vietnam from stakeholders' comments and opinions ask to delete or to replace some courses, especially courses in part of basic knowledge, but it is very difficult to implement *(Exh.01.07, Exh.01.08, and Exh.01.09).*

3.5 The programme shows breadth and depth

Three knowledge blocks of the Electrical Engineering program show breadth and depth. Breadth is covered on social knowledge and skills, basic knowledge and specialized knowledge. In each block, there are different levels from basic levels to higher levels including both theory and practice *(Exh.01.05)***.** Because of increasing needs of labor market that require graduates have to use knowledge with breadth and depth to work for satisfaction of labor market. Like different blocks, especially, the specialized knowledge is clearly divided into three specialized directions: Power System, Industrial Power and Power Supply and other different skills as: "in depth understanding of scientific principles, analysis and design skills to achieve success in the practice" *(Exh.01.05, Exh.02.03).* Furthermore, graduates have to receive and integrate sustainable knowledge and skills that is necessary for lifelong learning in postgraduate levels *(Exh.03.04)*. Thanks to stakeholders' feedback, in the future, the program quality will be enhanced both in breadth and depth.

3.6 The programme clearly shows the basic courses, intermediate courses, specialised courses and the final project, thesis or dissertation

Program specification and program structure and contents clearly show useful information about the basic courses, intermediate courses, specialised courses and the final project, thesis or dissertation *(Exh.01.05)*. It is easy for students to design and implement their learning plan to achieve learning results. The program also needs to clearly identify all course levels and relevant subjects *(Exh.01.03)*. To graduate, learners have to complete 135 credits in the curriculum, the structure and contents of program provide students with 03 knowledge blocks: general, basic and specialized knowledge. Especially, specialized knowledge divides into 03 parts with specialties: Power System, Industrial Power and Power Supply, then students can 02 directions with researching: students can decide to do the final dissertation or projects combined with some optional specialized courses that are equivalent to 10 credits (*Exh.01.03).* The curriculum has 30 optional credits, and students have to choose at least 20 credits. The curriculum is updated regularly to add more optional courses, depending on stakeholders needs, especially the labor market (*Exh.01.07)*. This program has to be updated with new courses to satisfy with current social needs and be clearly added information about the basic courses, intermediate courses, specialised courses and the final project, thesis or dissertation.

3.7. The programme content is up-to-date

Goals of training activities are to reach to stakeholder satisfaction, so the programme content has to be updated according to changing needs of stakeholders *(Exh.01.03, Exh.01.07)*. Some of **c**ontents of ELOs are to promote life-long learning, to cover different knowledge blocks and to reflect the requirements of the stakeholders. Program structure and contents are periodically supplemented and

improved. Program update bases on results of stakeholders feedback: lecturers, students, graduates *(Exh.01.09)* in meetings of Departments. Besides, electrical engineers of Departments provide stakeholder-labor market feedback to improve program *(Exh.01.08).* The programme content is up-to-date is depended on different elements: MOET program framework, training process, regulation of credit-based system, teaching and learning strategies. Program improving is to increase its quality via comments from companies (labor market) and this is apart of all QA process and is also referenced to different domestic and oversea Electrical Engineering Programs.

In plan of last times in 2007 program is updated and changed into credit-based system *(Exh.03.06)* and in 2010 the program is improved 2nd time. CTU and COET increase quality activities of regular surveys to evaluate course ELOs *(Exh.05.02).*

a) Strengths

- The program provides sufficient specialized knowledge and basic skills for learners. The generic and basic knowledge is sufficient in order that students can study higher.
- The curriculum is structured to show range, depth, coherence and organization of the courses. The generic and basic knowledge is sufficient in order that students can study higher.

b) Weaknesses

- The curriculum has not been examined and evaluated by labor market, alumni and specialists.

a) Actions

In 2012, the department and the college will have plans to:

- Implement surveys to get feedback about the program content and structure from external experts, employers and alumni.
- Adjust and edit the contents of practices/ practical classes in order that students can consolidate their knowledge and improve professional skills.

4. TEACHING AND LEARNING STRATEGY (TLS) (TLS)

CTU and COET use TLS. It enables students to achieve and use knowledge. It helps student to have private directions for quality learning, stimulates action learning and facility for learning basing on CTU's, COET's vision, Statute No 43/2007 of MOET, Academic Regulation of CTU, Training Plan, a student-centered approach to education, Handbook for lecturers and others.

4.1 The faculty or department has a clear teaching and learning strategy

Basing on mission, vision, statutes, regulations, educational plans and other things above CTU and CoET have just designed teaching and learning strategy. Introduction: CTU's Teaching and Learning Strategy for 2012-2017 supports the University's mission, vision and educational objectives. Its aim is to ensure the high standards of teaching and learning approaches**.**

4.1.1. Introduction: CTU's Teaching and Learning Strategy for 2012-2017 supports the University's mission, vision and educational objectives. Its aim is to ensure the high standards of teaching and learning approaches**.**

4.1.2. Principles: a) CoET will implement adequately mission, vision, educational objectives, educational plans and support services, b) will comply with Educational Law, Statutes, Regulations.

4.1.3. Implementation and management of educational process

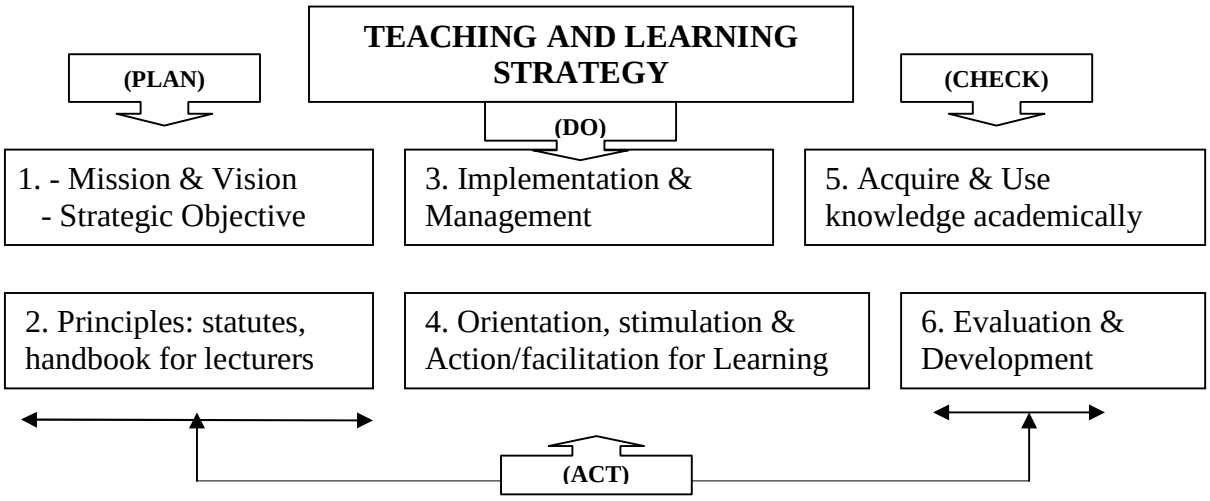
4.1.4 Teaching objectives: lecturers deliver students a) orientation, b) stimulation, c) action learning, d) facilitation for learning.

4.1.5. Results of Teaching and Learning Strategy: Learners will acquire and use knowledge academically *(Exh.06.06 & Exh.05.04)*.

4.1.6. Evaluation and development: CTU uses PDCA cycle to implement Teaching and Learning Strategy *(Exh.06.06).*

Besides, Specialized teaching staffs have good professional knowledge, enthusiasm and most of them are skilled in computers and foreign languages. Staff training plan in period 2008-2015 was publicized. Lecturers are well trained both specialized knowledge and pedagogy and have abilities to manage the large numbers of students or group in some courses. *(Exh.04.02).*

***Figure 5:** Teaching and Learning Strategy*



4.2. The teaching and learning strategy enables students to acquire and use knowledge academically

a) At the beginning of course lecturer introduces learners how to learn theory and practice from the teaching and learning strategy. Lecturer with up to date breadth and depth knowledge (Exh.04.07) uses adequate teaching methods according to student-centered approaches, the teaching methods through action, creating products can stimulate the learning spirit of students and help them master their knowledge better and different supports to help students to **acquire knowledge academically**. It will stimulate the learning spirit/keen sense of students and make comfortable environment for learning. (Exh. 04.02 &Exh. 04.03)

b) Organizing practice-training activities, students report and answer questions in groups, in laboratory and outside, implementing active teaching methods depending on requirements of each course and realistic conditions not only provide with students a positive learning spirit, but also many other necessary skills in use of ***knowledge academically.*** The above teaching methods aim to construct the activeness of students' learning process via Full Course Studying Plan of Students *(Exh.04.04, Exh.04.09 & Exh.04.10).* In teaching plan, CTU and COET must consider regulations and conditions to implement the teaching and learning strategy, especially, to use and improve teaching methods better. However, in class size, minimum number of students per lecture is 25; but in laboratory, the maximum number of students per group is 40 and the minimum is 20 students. CTU and COET will need to have adequate plan to adjust the size of maximum number of students per lecture and laboratory. At the same time, lecturers themselves can divide class into 3 or 4 smaller groups/teams to take turns doing the same exercise (*Exh. 04.09, Exh. 04.10& Exh. 04 Exh. 04.13*).

4.3. The teaching and learning strategy is student oriented and stimulated quality learning

a) Course ELOs and Program ELOs that student clearly needs to know, how to learn and to achieve. The teaching and learning strategy is still a tool in process of interaction between lecturers and students to achieve course ELOs. This process is student oriented quality learning. The teaching and learning strategy in which Course ELOs and Program ELOs, teaching and learning plan/methods and different support conditions

are implemented. Flexibility of credit-based training system encourages student independence and autonomy to choose courses or others for their quality learning plan and for right own direction/orientation (*Exh.04.04).* The assignment list of teachers, who are in charge of theory subjects, practical subjects or projects, was made publicly at the beginning of each semester *(Exh.04.03);* each subject has at least two university teachers in charge. The Department also made a detailed plan for the progress of doing dissertations and essays to help students take the initiative to implement their learning tasks *(See Exh.01.03).*

b) The teaching and learning strategy is described in the used principles: statutes, regulations, support services, consultant activities via seminars; meeting students in the beginning of every academic year to discuss the difficulties and learning experiences, innovative experiences; exchanging experience with prior students or the alumni and so on (*Exh.04.11).* Students can exchange experts easily with teachers directly or through the email system. The university and the college have enough computer rooms as well as wireless internet (Wi-Fi) to serve the learning, teaching and research needs of students and academic staffs. CTU and COET have plans to exchange information and experience, consultancy and support in all aspects and self- studying process to enhance the soft skills of students. They stimulate qualitative learning of all students *(Exh.04.06, Exh.07 & Exh.04.12).*

4.4. The teaching and learning strategy stimulates action learning and facilitates learning to learn

a) The essence or nature of credit-based system must provide students with adequate conditions for learning and ask to study how to learn through action, so the teaching and learning strategy is support tool for these contents. Beside of CTU and COET regulations, good support conditions, teaching and learning plan and the adequate active, situation or student center teaching methods (the teaching method in which the teacher reads and the students write replaced by suggesting the main points for students to think and explore themselves) to stimulate action learning. In each semester and academic year, the Full Course Studying Plan of each student designed and sent to his/her academic advisors for approval *(Exh.04.04).* By doing so, students can be more active and flexible in scheduling and more conscious in their learning. Teaching methods including active teaching methods, teaching method through action and learning by doing to stimulate the learning spirit of students and the wide application of information technology and research activities of students and academic staff should be increased to help students to be conscious in changing learning ways from negative to active (Exh.08.04).

b) For adequate implement of credit-based system, learners have provided ***facilities for learning.*** Practical knowledge of students accumulated through site visits in organizations, companies outside the university *(Exh.02.09, Exh.04.13).* Students' assessment is performed in each session with many various forms depending on each course. Kinds of assessment and course specification announced and informed widely and sufficiently by the teachers on the first class of the course. Students are clearly informed/introduced their needs to learn courses and curriculum: program structure and contents, teaching and learning plan/strategy, assessment methods, etc at the beginning of courses and in the process *(Exh.04.03, Exh.01.03).* Teaching strategies expressed through the program; students must learn the knowledge logically through prerequisite courses *(Exh.01.03).*

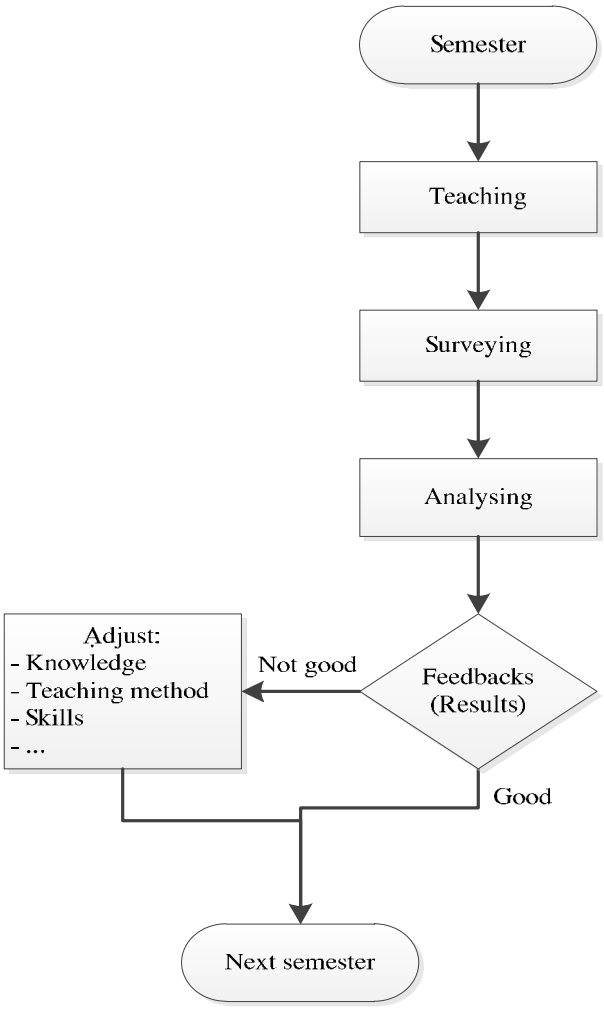


Figure 6: Feedback and information from students

After each semester, students give their feedback through the Course Evaluation Form related to teaching and learning strategies, knowledge, skills and qualifications obtained after completing the course, active teaching methods and their level of satisfaction about the course … QAT of CoET collects questionnaires and returns them to QATC; QATC processes data and provides results of statistics to use for course development and improvement. Results are sent back to CoET with statistics at faculty level. QAC also sends statistics at university level to the Rectorate Board of CTU. Each lecturer receives the results in a closed envelop with rates of each criteria for a course, and adjusts the teaching and learning activities of the course in next semesters basing on those helpful feedbacks of students.

The adjustments on the curriculum and the content of courses are based on feedback and information from students, such as adjusting the class size, improving the course registration process… The Department of Electrical Engineering collected feedbacks via different methods. CTU also considers the involvement of other stakeholders for course and curriculum development and improvement.

a) Strengths:

§ The strategy for teaching and learning is designed and implemented by a variety of methods
§ The wide application of information technology makes good conditions for both students and lecturers in learning, teaching and researching.

b) Weaknesses:

§ It is hard to apply new teaching methods in some course classes because of the large number of students in each class.

c) Actions:

§ In 2012 & 2013, the college will decrease the number of students in some course classes.

5. STUDENTS ASSESSMENT (SA)

CTU and COET comply with the Statute No 43/2007/MOET *(Exh.08.04)* and the Academic Regulation of CTU in students' assessment *(Exh.02.08).* The student assessment includes entrance assessment, learning progress and exit test assessment *(Exh.05.04).*

5.1. Student assessment covers student entrance, student progress and exit tests

5.1.1. Student Entrance Assessment

CTU and COET recruit candidates via the annual National University Entrance Examination. Student entrance assessment complies with MOET's recruitment

Regulation *(Exh.05.01).* Recruiting good and adequate candidates into EEP is to express the recruitment with publicity and obviousness *(Exh.05.04).* From 3rd to 10th of July annually, candidates passed entrance assessment to Regular students including:

a) Candidates (passed the examination in Post Second School) apply into CTU with adequate documents like necessary procedures *(Exh.05.02).*

b) Candidates passed National University Entrance Examination with 03 subjects: Maths, Physics and Chemistry *(Exh.05.03).*

c) The total marks of candidates are:

- Equal or higher at basement marks level under MOET Regulation
- Equal or higher at standard marks level under CTU and COET Regulation *(Exh.05.01).*

For candidates, this is a very heavy/difficult examination because it wastes very big human and financial resources, so MOET should have some other directions for assessment of student entrance in the future.

5.1.2 Student Progress Assessment

CTU and COET have a good Progress Assessment System including activities to help students clearly know information about "Who they are?", "Where they are?", "How/What they have to do?" or "Where they go?". It is necessary to implement Progress Assessment to control, to adjust and to improve student's quality learning *(Exh.05.04).* ELOs, program structure and contents; teaching and learning strategy provide students with the best direction to get good results/success before graduation *(Exh.05.04).*

5.1.2.1. For courses, Students' Progress Assessment consists of:

a) Lecturers **inform and introduce** needs, contents, time, ways and methods of assessment strategy, applicable criteria of evaluation at the beginning of every course *(Exh.04.04).* Having a short assessment in first class helps lecturers to understand student's background in class. For English, from the school year of 2011-2012 ahead, new students enrollment in CTU have to pass a TOEIC examination held by IIG (International Investment Group) to be classified into different levels in order to be taught non-major languages at different levels. In the year of 2012-2013, CTU has just organized itself an examination for that purpose *(Exh.05.05, Exh.05.06).* Under CTU's Academic Regulation, Statute No **43/2007/QĐ-BGDĐT (MOET), 15/08/2007, Article 19:**

b) Course Assessment: **Mid-term assessment** includes oral, exercises, multiple choice tests, practice in pair or in group, writing, homework, practice in the laboratory report and total marks are under 50%. Depending on the purpose and requirements of each course, learning object, lecturers have appropriate forms of assessment and ensure compliance with the principles of objectivity and accuracy *(Exh.04.04).*

c) **Final test** with knowledge covers all courses and total marks are > 50% *(Exh.04.04).* According to university procedures, after publishing the results, teachers directly answer questions and complaints about the test results of students *(Exh05.04).* Lecturers input the learning results Student learning results, which are ranked on an alphabetic scale (A, B +, B, C +, C, D +, D, F) *(Exh.05.08),* are input to management system and submit to college and university *(Exh05.07).*

Table 10. Relationship of cardinal mark:

ABC- point scale	4-point scale	Category
A	4.0	Excellent
B+	3.5	Good
B	3.0	
C+	2.5	Average

C	2.0	
D+	1.5	Poor
D	1.0	
F	0.0	Very poor

d) Average Mark of Semester, Average Mark of Year, Accumulated Average Mark *(see Item 23 in the Academic Regulations)*

- **Accumulated courses**: courses finished with D mark or above. Courses finished with "F" will be not accumulated.

- **Accumulated credits** are the number of credits of accumulated courses.

- **Average Mark of Semester:** is the average mark of courses in a semester (including courses obtaining "F" mark and conditional courses) whose weight is the total credits of those courses.

AMS is the basis of studying results evaluation, scholarship approval, reward, academic warning after each semester. AMS is calculated as the following formula:

$$\text{Average Mark of Semester} = \frac{\sum_{i=1}^{n} a_i X_i}{\sum_{i=1}^{n} a_i}$$

In which: X_i *: is the mark of course i;* a_i *: is the number of credits of course i;*

n: is the number of courses registered in a semester

- **Average Mark of Year:** is the average mark of courses in a 02 main semesters of an academic year (including courses obtaining "F" mark and conditional courses)

- **Studying ranking:** basing on AMS, AMY, student learning results are ranked as follows:

Table 11. The classification of learning results based on grade scales

CATEGORY	4-POINT SCALE
Excellent	From 3.60 to 4.00
Very Good	From 3.20 to 3.59
Good	From 2.50 to 3.19
Average	From 2.00 to 2.49
Below Average	From 1.00 to 1.99
Weak	<1.00

- **Students ranking** is also based on the total credits accumulated, not on the academic time of students *(Exh05.06).* Relative teaching and support staff (QA staff, training bureau assistants, CTU inspectors) involved in examination.

Table 12: Sorting of student training years

Year of training	**Accumulated credits Cohort 35 forehead**	**Accumulated credits Cohort 36 to present**
First year	Under 36	Under 30
Second year	From 36 to under 70	From 30 to under 60

Third year	From 70 to under 105	From 60 to under 90
Fourth year	From 106 to under 140	From 90 to under 120
Fifth year	Over 140	From 120 upwards

5.1.2.2. For program, CTU and COET have monitoring system for the whole teaching and learning process. This system informs student's progression to adjust learning plan. This system also provides students and family about weaknesses levels of student (Academic Warning). At that time both 2 sides (CTU and student with family) find out the best direction to improve ***(Exh.05.09).*** CTU and COET must adjust assessment activities of system better.

5.1.3 Students' Exit Assessment

ELOs that student achieve for courses or subjects in teaching and learning process, are accumulated ***(Exh.02.08, Exh.05.04).***

Under credit-based system, CTU and COET have implemented students' exit assessment to prepare for graduates necessary procedures/conditions. It bases on almost accumulated results that ELOS are required.

For student requirements are approved graduation, Under Academic Regulation, no 43/2007/QĐ-BGDĐT (MOET), 15/08/2007: Approval for graduation

1) Article 24: final program practice, project/thesis/ dissertation.
2) Article 25: Marking final program practice, project or thesis or dissertation
3) Article 27: Requirements graduated approval with following points for student:

Under CTU's Academic Regulation, Article 33: Controlled conditions

a) In last year, student is not a violator in institution and in society.
b) Course results are accumulated enough that is like a rule…

Under Academic Regulation, no 43/2007/QĐ-BGDĐT (MOET), 15/08/2007, Article 28: Notification of learning results.

On average, about 90% of students in the program graduate after 4.5 years ***(Exh.01.05).*** Students' exit assessment system needs to be considered more and more for any steps to complete and to have efficiency.

5.2. The assessment is criterion-referenced

CTU and COET use the assessment that is criterion-referenced. The clear-referenced assessment criterions are provided in Academic Regulations. They are well known and approved by relative members. They are common standards in Nation and are reaching to quality in AUN standard.

Adequate process, methods and criteria for assessment shown in Academic Statute N^{o} 43/QĐ-BGDĐT (MOET) for each theory and practice course ***(Exh.08.04).***

Criteria for marking dissertation, essay, and project based on structure, content, necessary science, achieved results, application in practice, presented and answered skills before Assessment Committee:

1) Criteria for marking practice: combination with practice process and practice report writing, presentation and working on set of experiment instrument.

2) For theory courses: exercises, test in class, middle semester examination, assiduous activities (assiduous marks).

Beside of criteria in Academic regulations teaching and support can use other criteria or referenced criteria from own ways outside.

5.3. Student assessment uses a variety of methods

Like 5.1. For student entrance, progress and exit tests there are a variety of methods**.** ***Like 5.6.*** The assessment methods cover the objectives of the curriculum, so they must variety methods satisfies needs in each objective, each course, exercise, each knowledge and skill and learners. For student entrance assessment, candidates must pass National University Entrance Examination *(Exh.05.01)*. For student progress assessment for each course, students must pass mid-term examinations and final test for each course. The tests are carried out in a viriety of methods such as oral test, writing, pair work, group work, assignments, projects… According to goals of each course, lecturers have adequate assessment methods and are responsibilities to answer questions or complaints of students *(Exh.02.08)*. The course results are the combination of partial test results. *(Exh.01.03, Exh.01.05).*The classification of course results in progress assessment is defined as in Table 05. For student exit assessment, students must accumulate enough the amount of credits as requirements of the program (135 credits), and the final accumulated average mark must be 2,00 at least to graduate. The ranking of graduates is defined as in Table 06.

Table 13. The scoring rubrics of course

Score	Description
4.0	Demonstrates complete understanding of course. All requirements of task are included in response.
3.5	Demonstrates considerable understanding of course. All requirements of task are included.
3.0	
2.5	Demonstrates partial understanding of course. Most requirements of task are included.
2.0	
1.5	Demonstrates little understanding of course. Many requirements of task are missing.
1.0	
0.0	Demonstrates no understanding of course.

5.4. Student assessment reflects the expected learning outcomes and the content of the program

Expected learning outcomes (ELOs) are requirements on 03 bolcks of knowledge and skills with courses that students have to achieve. Therefore, student assessment must reflects the ELOs and the content of the program. To do that, the tests and assessment methods of lectures in each course have to cover the content of the course and reflect the course ELOs. The ELOs, teaching methods and assessment methods are introduced to students in the first class of the course. At the end of the course, students show the feedback through the Course Evaluation Form about the suitability between the course assessment and the contents of the course as well as ELOs.

Table 14: Student Assessment achieves ELOs (For example of Course CN283)

ELOs		**Student Assessment**
Use modern engineering techniques, skills, and computer-based tools for analysis and design		Teach students to use the software as Maxwell, Ecodial 3, Luxicon and Power world… mathematical modeling for heat, power supply, lighting design, power system analysis…
The graduation rank criteria of Electronical and Engineering major		
Category	**Score**	**Description**
Excellent	3.60 – 4.00	Graduates master complete knowledge and understanding of Electronical and Engineering major outstandingly. All requirements of task are included in response and applied creatively in their job.
Very Good	3.20 – 3.59	Graduates master complete knowledge and understanding of Electronical and Engineering major. All requirements of task are included in response.
Good	2.50 – 3.19	Graduates master considerable knowledge and understanding of Electronical and Engineering major. All task requirements of program are included.
Average	2.00 – 2.49	Graduates just have enough knowledge and partial understanding of Electronical and Engineering major. Most task requirements of program are included.

5.5. The criteria for assessment are explicit and well-known

CTU and COET use the criteria for assessment are explicit and well-known under MOET and CTU' Statues. They are popularizing and training. *Assessment activities with* the explicit and well-known criteria are necessary and very important *(Exh.08.04).*

1) Explicitness of criteria is carefully designed by experts and published in Academic of Statute No 43 of MoET, 15/08/2007 and Regulations of CTU. For example: They are *Assessment entrance* criteria, *Assessment progress* criteria and *Assessment exit* criteria.

2) Like explicitness of criteria, clearly understanding of assessment criteria is an important requirement and is informed to stakeholders-participants (lecturers, students and so on) who participate in teaching and learning process/strategy to clearly know. Lecturers, learning advisors and managing staff must frequently train in order to they well-know and exactly understand explicitness and knowing of criteria *(Exh.08.04).*

5.6. The assessment methods cover the objectives of the curriculum

Objectives: "Graduates of the Electrical Engineering program will: engage in professional practice in electric power, energy system, Industrial Power, Power-plant operation; promote innovation in the design, research and implementation of products and services in the electrical engineering area through strong communication, leadership and practical skills; engage in life-long learning" .

The assessment methods cover curriculum objectives informed by the teachers in the first class, based on course specification and academic regulations. Students clearly understand about the assessment strategy *(Exh.08.04).*

Like 5.1, Students' Progress Assessment is checking students achievement for ELOs, program structure and contents and results of teaching and learning process/strategy/objectives.Teaching and learning methods are demanded the adequate assessment methods for all knowledge blocks commonly and for course or subject. ELOs cover both generic and specialized skills and knowledge, so there are adequate assessment methods on very course objectives *(Exh.08.04).Students and relative teachers and support staff must be exactly trained on* the assessment methods.

5.7. The standards applied in the assessment are explicit and consistent

CTU and COET use the assessment standards that are explicit and consistent in Academic Regulation *(Exh.02.08).* 1) Standards have explicitness that helps students easily to understand them**;** lecturers exactly deploy and managing and support staff effectively monitor and help assessment activities. **2)** Standards have consistency that clearly shows private assessment contents and they do not overlap each other. Standards are explicit and consistent between contents. For example:

a) **Entrance assessment standards*:*** Candidates must pass National University Entrance Examination and get marks in equal or over floor marks of MOET and Standard marks of CTU and COET for EEP and different intake policies.

b) Progress assessment standards: Student achieve course ELOs, he or she must implement mid-term test with different form and methods to get and accumulate marks under 50% and final test –over 50% of total ones.

c) Exit test assessment standards: Under Academic Regulation, no 43/2007/QĐ-BGDĐT (MOET), 15/08/2007: Approval graduations at Article 24: final program practice, project/thesis/ dissertation. Article 25: Marking final program practice, project or thesis or dissertation. Article 27: Requirements graduated approval with following points for student and other.

When CTU applied the full credit-based system, teaching staffs are responsible for all activities related to the course such as teaching, designing tests, organizing exams, marking, and publicizing the results to students; and the teaching staffs must followed the approved course specification. The final results of students assessment are approved by the Dean of CET before publicizing and storing.

The assessment standards are explicit and consistent, but they must be adjusted because they depend on change of ELOs, program structure and contents and teaching and learning strategy.

a) Strengths:

- The student assessment bases on multiple criteria and focus on each course with appropriate assessment methods.
- The student assessment is widely informed for students on the first class of the course, and at least one week prior for tests.

b) Weaknesses:

- The mid-term and final exams are not inspected throughout. Some invigilators did not strictly handle some cases of examination regulation violations.
- The marking grades of the mid-term and final examinations are depended on lecturers.

c) Actions:

- In 2012, the college will consider for organization of mid-term and final exams.

§ In 2012 and later, marking grades of the mid-term and final examinations are controlled adequately.

6. ACADEMIC STAFF QUALITY

The quality of teachers plays a key role in enhancing the quality of students output to meet more and more high requirements from the labor market and the society. So staff's competent, sufficient, recruitment, roles, allocated duties, staff workload, accountability,… are described clearly.

6.1 The staff are competent for their tasks

According to Recruitment Statute, the staff has competent for their tasks for the whole training program of Electrical Engineering. The quality of teaching staff decides the quality of a program.

1) Knowledge and qualification, under recruitment Statute of MOET and CTU, Regulation of professional work management, knowledge and degree (having upgrade) of staff satisfy requirements for their tasks in teaching and learning strategy in accordance with their qualifications and they are also trained in pedagogical competences and management skills, so they are able to meet the assigned tasks *(Exh.06.01, Exh.06.02).*

2) Design and develop curriculum, with stakeholders' satisfaction feedback academic staff with own professional areas with good experience visiting lecturers coming from the University of Technology in Ho Chi Minh City participate to design, develop and to improve curriculum/program *(Exh.06.07, Exh.06.12, & Exh.06.16).*

3) Classroom management and assessment, all lecturers are made good conditions to study abroad in order to improve and enhance their ability and apply new teaching methodology event in classroom management and assessment and comply handbook for lecturers *(Exh.02.08 Exh.04.03)*

4) Academic staff in researching activities, MOET's policy research activities service education activities", so beside of the teaching task, the teachers also state their ability through doing research and their papers published on the international journals *(Exh.14.04).* The department has training plan for academic staff at post-graduate level to increase the number of qualified lecturers.

***Size of the staff and their qualifications*:**

Table 15: Number of Academic Staff (*Department of Electrical Engineering).*

	Male	Female	Total		Percentage of PhDs
			People	(FTEs)*	
Professors					
Associate/ Assistant Professors					
Full time lecturers	21	0	21	21	4,7%
Part time lecturers					
Visiting professors/lecturers	1		1	0.6	
Total	21(**)	0	21	21	4,7%

Reference date: 10/12/2011

(*)FTE stands for Full-Time Equivalent. This is a unit to calculate the investment of time. 1 FTE is equal to about 40 hours per week (full-time employment). A staff member with a weekly appointment of 8 hours is 0.2 FTE.

***(**)** Note: This is the statistic number of teaching staff of Department of Electrical Engineering in College of Engineering Technology*

6.2 The staff are sufficient to deliver the curriculum adequately

COET has the staff are sufficient to deliver the curriculum adequately. To make sure to achieve ELOs of teaching and learning process, COET must organize (teaching and support) staff force. 1) Regular staff (lecturer and main lecturers), the Electrical Engineering Department has 21 lecturers including 01 doctor, 13 masters and 07 bachelors. Apart from the lecturers who teach the fundamental subjects, the department also has the teaching participation of many lecturers with master degree from other departments in the college. Therefore, the number of staff is sufficient to meet the task of teaching training programs *(Exh.06.02).* 2) Lecturer Assistant, COET has some kind of assistants *(Exh.06.14).* 3) Visiting lecturers, from different units (schools, colleges) at CTU or outside lecturers for the block of fundamental and specialized knowledge includes 47 modules, and every teacher is in charge of at most 2 modules to ensure the depth and conduct research. The College has plan to recruit more 3 lecturer members up to 2016 to always meet the training need. The plan is to satisfy teaching need and assure quality of MOET (20 student/ lecturer)

Table 16: Staff/student ratio and staff/graduate ratio (please specify the year)

Total FTE of teaching staff*	Number of students	Number of graduates	Number of students per FTE of teaching staff	Number of graduates per FTE of teaching staff
21,6	150		6,9	

Reference date: 10/12/2011

** Realistic estimate of the number of FTEs of teaching staff. The number of students enrolled in the program at the beginning of the academic year. If this number is not considered to be representative, please specify what it should be.*

6.3 Recruitment and promotion are based on academic merits.

For recruitment and promotion, CTU and COET have the policy of selecting for the most suitable candidate for a specific requirement. Recruitment and promotion according to academic merits will encourage staff and will exploit their abilities.

1) For recruitment process on academic merits, the recruitment announcement is publicized on the Website of the University and the College. The recruitment is strictly done according to the Statutes of MOET and Can Tho University *(Exh.06.01, Exh.06.02).* To be a teacher in the College of Engineering and Technology, the candidates are required to meet the standards as follow: a) Good at the Electrical Engineering, b) Level B in English, c) Level A in computer skills and d) Master and Doctoral degree. The fostering and training for new recruited staff are concerned and carried seriously out soon after recruitment. Before starting their work as a lecturer at COET, he/she has to pass a 2-month probation with the instruction of an professional and experience lecturer. *(Exh.06.03, Exh.06.04).* The college always encourages and makes favorable conditions for staff performance through "Recruitment policy and procedure to enhance lecturers' qualifications" *(Exh.06.01),* "Management policy on professional work of teaching staffs" *(Exh.06.12).*

2) For promotion on academic merits, the University's promotion process will offer recognition and reward for sustained excellence. For lecturers who demonstrate active and effective contributions to teaching, research, and service to their discipline/profession, the University, and the community will consider to get higher position. Promotion to all levels will be on the basis of the merits. "Policy on rewarding to staffs who finish their advanced study ahead of schedule" *(Exh.06.06).*

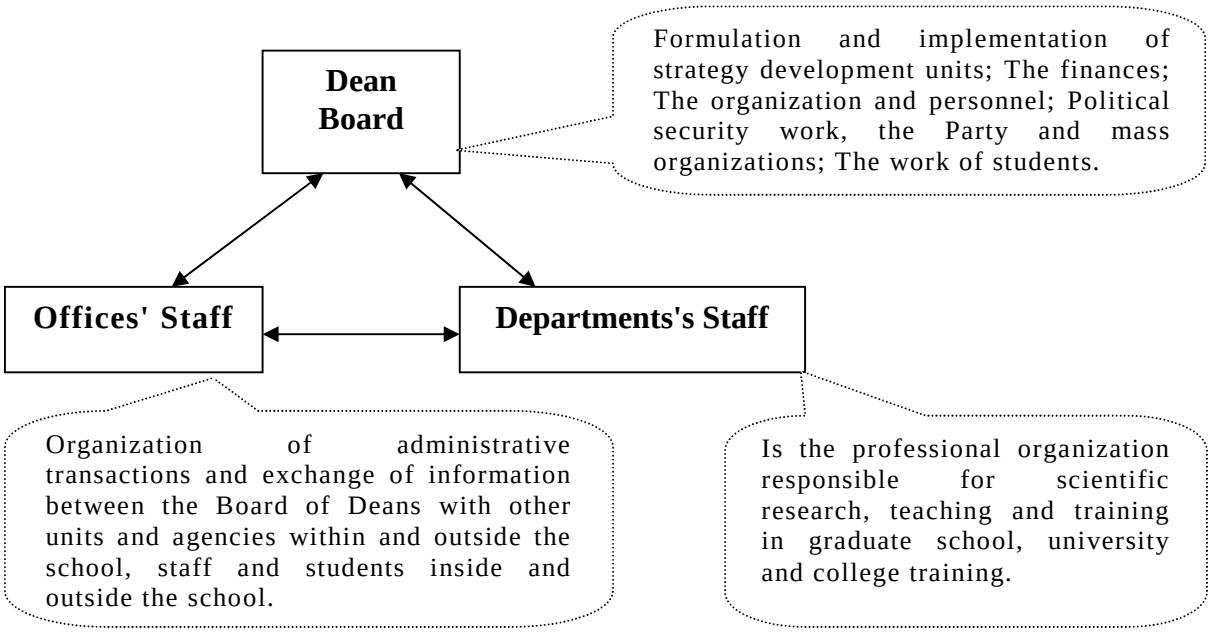
6.4. The roles and relationship of staff members are well defined and understood

The roles and relationship of staff members in CTU and COET are well defined and understood via the assigning list. The organisation chart to show the relationships of staff members and their job description are shown via website (Exh.06.??...(dia chi website). It contributes on achieving the goals, mission and vision of CTU and COET as well. The roles and relationship of staff members are clearly regulated as follow:

For roles of staff, 1) About roles of staff in COET: Staff is nominated and is responsible for leader levels. 2) About roles in teaching and learning activities: a) Study and well understand about mission, vision, the objectives, contents, teaching methods, course requirements and results evaluation of student learning; b) Lecture, tutorial students self-learning skills, research and scientific discussion, participate in practical activities, written essays, graduate training, proposal development and writing graduation thesis, etc *(Exh.06.12).*

For relationship of staff, the relationship between the older teachers and the younger ones is also good. They work together to use effectively the teaching aids (computer, photocopier, power point, projectors, etc). The staff members are divided into small professional group to share and help each other in teaching and researching *(Exh.04.02).* It should have plans to periodically review and establish the responsibilities for academic staff.

Figure 7: The roles and relationship of staff members



6.5. Duties allocated are appropriate to qualifications, experience and skills

The department of Electrical Engineering has established the 03 specialized groups with participation of staff with appropriate qualifications, experience and skills *(Exh.04.02).* Based on the aspirations and qualifications of lecturers and the proposal from the specialised group, the department decides to assign appropriate task for each member. In the Statute of

professional management of CTU, the staffs' duties are clearly defined according to their qualifications, experience and skills (Exh. 06....). The allocation of work must be made in consultation with the staff member and, wherever possible, the Head of School must take into consideration that staff member's skills and experience.

Table 17. Assigned the task of teaching and research for faculty:

No	Job title, qualifications faculty	Now teaching obligations (Class Hour)	Hours obligations Scientific Research (Class Hour)	General now obliged (Class Hour)
1	Professor, Senior Lecturer	340	170	510
2	Associate Professor	320	140	460
3	Lecturer salary coefficient ≥ 5.76	310	130	440
4	Senior Lecturer with the salary from 4:40 to 5:42 and faculty with PhD	300	120	420
5	Faculty salary ratio ≥ 4.32	280	100	380
6	Faculty salary ratio from 3.33 to 3.99 and faculty with Master	250	80	330
7	Faculty salary ratio from 2.34 to 3.00	220	60	280
8	Probationary faculty (receive 85% of the starting salary)	50	10	60

6.6. Staff workload and incentive systems are designed to support the quality of teaching and learning

CTU and COET establish adequate plan for staff workload and incentive systems. The workload and income of each teacher in an academic year based on Statute No.43/BGDĐT/2007, educational plan and Internal Spending Regulation of CTU. They are encouraged teachers to innovate their teaching methods and research *(Exh.06.11& Exh.08.04)*. It is necessary to ensure that every employee of the University has an equitable, reasonable and safe workload.

1**)** For staff workload, there are some steps: First, staff registers their workload that heads of department and COET balances and approves. The workload corresponding to each class, grade of staff is clearly regulated by the professional Statute of Can Tho University. The average workload of each teacher is about 548 periods per year *(Exh.06.11& Exh.06.12)*.

2) University and the College also have incentive systems in encouraging teachers to do their research and through the officer evaluation conference at the end of each year *(Exh.06.08)*. For lecturers who do their outstanding in work will be considered to award precious titles. There is a need to adjust this thing for meeting the requirements of teaching and research in a new period.

6.7. Accountability of the staff members is well regulated

CTU and COET have rules for accountability of the staff members**.** Like from 6.3 to 6.5, staff is nominated by heads and is worked under assigned list of leaders, so it is necessary for accountability of the staff members should be well regulated *(Exh.06.12)***.**

Accountability of the staff throughout the entire university and the College as well is critical to its success or failure (weekly, monthly, every semester and yearly). Once they all understand their tasks, they will work together with a shared vision toward a common goal for long-term development of the organization. The duty in each class of staff is specifically regulated by the State and publicized right at the time of recruitment *(Exh.06.01), (Exh.06.02). Standard rules of ethics of staff is determined through the evaluation criteria the staff annually and staff must register at the beginning of each year (Exh. 06.09).* The ways for accountability of the staff members can improve better

6.8 There are provisions for review, consultation and redeployment

Review, consultation and redeployment are based on MOET's Statute, Labor Law and CTU's Regulation. They are communicated via websites of CTU, in Department of Personnel and on website of COET *(Exh.06.02).* To make sure impartial and lawful contents, CTU and COET complies provisions**.** There are some main steps: First, documents of personnel assistant that Dean of COET approved. Basing on that document and according to Statute and Labor Law, CTU has information and conduction to redeploy. Second, the assessment of suitability for a staff member's redeployment into a particular position will be based on the staff member's skills, qualifications, and capacity for new position yearly or basing on term of Rector. Any changes to the duties allocated to a staff member must be made in consultation with that staff member. For review, consultation and redeployment, rules and plans must balance to encourage staff.

6.9. Termination and retirement are planned and well implemented

According to Labor Law, CTU and COET have 10-20 years strategic Plan for academic staff and policy about termination and retirement *(Exh.04.06, Exh.04.07 & Exh.06.18).* To keep effective teachers in the profession, there are attractive retirement payments. The staff organization is well planned and implemented, including resignation regime, retirement and social welfare. Step 1, Department of Personnel is managing software/system for academic staff. Like 6.8, Department of Personnel (CTU and COET) inform academic staff at coming age of termination and retirement 3 months before the date of retirement. For male, it is age of 60 and female is age of 55. Step 2, Retired staff received Rector's decision and interests under retired policy. There are some cases: retired staff can have contraction to work in short time again, but do not keep leader position. Retire policy must be updated to make sure interests of retired staff.

6.10. There is an <u>efficient appraisal system</u>

CTU and COET have used an efficient appraisal system for assessing the teaching task of lecturers/staff. A system can have beneficial effects on teachers and help them improve their job satisfaction and personal development. There are some kinds of efficient appraisal activities, as "Staff Evaluation" and "teaching and learning Evaluation": 1) At College level, via "Staff Evaluation form" *(Exh.11.02)* yearly with 10 criteria in which there are adequate contents. In conference for Staff Evaluation, it shows self critical and critical ways and staff and head discuss on these contents to compare between the actual working load is in line with the prescribed load. 2) In University and COET levels, via other ways, as "Course Evaluation Form", via Teaching Diary" (*Exh.06.16),* "Comments for Study Program" from graduates, alumni, labor market, managers (*Exh.06.06, Exh.06.07).* Finally, leader approved results, gave common comments in future directions. Currently, many teachers feel that the appraisal has no or little consequence; therefore, it is necessary to become more skilled at using it intelligently and effectively. Assessment system through the evaluation criteria the staff every year. Good assessment results as a basis for reward at a higher level, an opportunity for promotion or advancement *(Exh.06.08).*

a) Strengths

§ There are policies for Recruitment and Promotion and most of staff are well trained.

§ Most of staffs of the department are young, so they are very enthusiastic about their choice and are very active in improving teaching methods and applying new teaching facilities.

§ There are efficient appraisal system,

b) Weaknesses

§ Lack of staffs with doctoral degree and experienced subject leading lecturers.

c) Actions

§ In 2012 and 2017 the university and college will have plan to increase the numbers of lecturers holding doctoral degree.

7. QUALITY OF SUPPORT STAFF

In order to make the best conditions for students in learning and solving their difficulties as well, beside of the lecturers, the support staff are always available to help students to complete their studies. In CTU, there are policy and plan to recruit and upgrade staff in which it is satisfied for requirements for support services/activities.

7.1 The library staff is competent and adequate in providing a satisfactory level of service

CTU and COET have policy and plan to recruit new staff in which the library staff are competent and adequate for service satisfactory (*Exh.07.01*)**.** The library staff have to help lecturers and students use library efficiently. For competent (recruiting requirement): graduation of library and management or others, foreign language degree (English, French) at A/B level or higher, information degree at B level or higher under CTU's recruitment process *(Exh.07.02)*. For satisfactory, it is evaluated via "Course Evaluation Form" and "Program Evaluation Form" (in criteria 13 and 15) and staff evaluation form. There are 03 library staffs to undertake common services in the college. The tasks of librarian are implement a good organization, classification of materials according to year and books by authors and others, composing briefs/guidelines in order that it is easy for readers or users to read *(Exh.07.03)*. Staff have to be an expert on material resources to update and help readers to borrow and return materials. They show the ways to find and use information via computers. Attitude of librarians: librarians have professional virtues, such as amiability, courteousness, patience, and righteousness. CTU and COET also have plans to upgrade knowledge of librarian and to recruit new staff as well.

7.2 The laboratory staff is competent and adequate in providing a satisfactory level of service

Like 7.1., for recruiting policies and plans, the laboratory staff is competent, because they are asked to help student to practice to make perfect. At CTU and in COET, there is an adequate laboratory system *(including CTU's common big laboratory in center, and private laboratories at COET)* with adequate (old and modern) different instruments for practice on specialized knowledge**.** There are *Rules as* Schedule, Right of laboratory using are complied for users to understand easily. For competent (recruiting requirement): graduation of technology (laboratory and management), foreign (English) language degree: B level or higher, Information degree: B level or higher. For satisfactory, it is evaluated via "Course Evaluation Form" and "Program Evaluation Form" (in criteria 13 and 15) and staff evaluation form. This is common task of laboratory staff is know how to operate equipment well. The laboratory staff are to be an expert on equipments with needs to use, protect and update when needed. In the college there are three staffs for laboratories. They are responsible for preparing laboratory equipment and caring the laboratory. Besides, there is also one lecturer in-charge of

each laboratory *(Exh.07.01).* CTU and COET have a plan to upgrade knowledge of laboratory staff and to recruit new staff in the future. *(Exh.12.05)*

7.3 The computer facility staff is competent and adequate in providing a satisfactory level of service

Like 7.1.and 7.2. the computer facility staff is competent and adequate in providing a satisfactory with requirements as these staff are asked to help students and lecturers in computer rooms**.** For competent (recruiting requirement): requirement for recruitment: graduation of computer technique and management, foreign (English) language degree: B level or higher, and under recruitment process of CTU. ***For satisfactory*:** it is evaluated via "Course Evaluation Form" and "Program Evaluation Form" (in criteria 13 and 15) and staff evaluation form. In COET there are 02 staffs for computer rooms *and* 01 staff for facilities with professional virtues. They are responsible for caring and operating computer rooms with a good organization according to requirements of using. They are experts on computer to protect and to update *(Exh.07.03).* CTU and COET have a plan to upgrade knowledge of computer staff and to recruit new staff in the future (*Exh.07.05)*

7.4 The student services staff are competent and adequate in providing a satisfactory level of service

Like some points above, policy and plan to recruit new staff: academic assistants, student affairs, staff of dormitory, counselors, officers of Department and College clearly considered as in teaching and learning process and student life activities these staff provide helpful works**.** For competent (recruiting requirement): graduation of different majors, foreign (English) language degree: B level or higher, Information degree: B level or higher and under CTU's recruitment process. For satisfactory, it is evaluated via "Course Evaluation Form" and "Program Evaluation Form" (in criteria 13 and 15) and staff evaluation form. In office of the College, there are 10 staffs with good professional attitudes. They are in charge of organizing and combining with the learning counselors in student management across the College *(Exh.07.04).* They receive and satisfy all relevant inquiries in teaching and learning activities and event student affairs, dormitory, student life: physical, spirit/psychology. CTU and COET have plans to upgrade knowledge of these staff *(Exh.12.05).*

a) Strengths

- Support staff is very enthusiastic, dynamic and united in their work.

b) Weaknesses

- The laboratory staff is still limited in number and experience.

c) Actions

- The college and department will have plans to recruit new adding staff for laboratories and upgrade knowledge of them.

8. STUDENT QUALITY

8.1. There is a clear student intake policy

Yearly, CTU and COET use a clear student intake policy and plan basing on National Recruitment Entrance Examination Statutes of MOET. Annual number of admissions of electrical and electronic engineering programs prescribed by the MOET (*Exh.08.01, Exh.08.02).* CTU yearly recruits with limited rates of under 10% of candidates. The enrollment score is not lower than the floor of the provisions of the MOET and the annual enrollment of electrical and electronic engineering programs such as **table 17.**

Table 18: The number of application and selected and the enrollment score of electrical and electronic engineering programs

Year	The number of application	The quota of MOET	The actual number of enrolment	Enrollment score	Floor of MOET
2007	1151	120	141	15.0	15.0
2008	1261	110	133	13.0	13.0
2009	1232	120	123	13.0	13.0
2010	1372	120	162	13.0	13.0
2011	1411	90	101	13.5	13.0
2012	1227	90	120	14.0	13.0

This popular Statute is a clear student intake policy. It shows an impartial publicity, explicit, humanity with priority for different objects/candidates to recruit the best candidates.

There are some steps:

1. Annually, basing on CTU's resource and needs of labor market, MOET approves number of quota of candidates/new students.

2. Candidates find out information via website and in different channel as consultancy of **Entrance Examination** and the book *"Những điều cần biết về tuyển sinh ĐH-CĐ"* [A handbook for students' recruitment at universities and colleges]. The book explains the national universities and colleges entrance exam, the list of universities, colleges and their programs. Based on the information in the book, candidates make choices and apply for programs of universities and colleges. Candidates can read ELOs and Program specification via Internet, recruitment consultancies or Program Specification of EEP**.**

3. The candidates must pass **a serious Competitive National University Entrance Examination** in July that accesses students in three subjects: Math, Physics and Chemistry to become a student of The EEP at Can Tho University- a public university.

4. Candidates must get grades that are equal or higher floor grade at MOET's level and equal or higher standard/passing grades at CTU's level in 2011 are from 10 to 13.5 (out of 30). The different passing grades apply for different groups of students who live in different geographical areas and have different families' background. *(Exh.08.02).*

It takes us very big resources and time and it covers on candidates by an entrance burden. Specially, Department notes low passing entrance grades, so in plan this content will be improved next time.

8.2. The student admission process is adequate

CTU and COET have organization for the student admission process is adequate. After competitive entrance examination, CTU and COET comply with the Statute of MOET and CTU for receiving new students**.** There are following steps**:**

1) At university level**:** In 3 weeks after examination, there is adequate organization for marking exam papers and multiple-choice tests**.** Basing on passing grades, President/Rector of Marking Committee of CTU approves list of candidates with passing grades for EEP *(Exh.08.03)* and informs result for candidates who became new students of CTU. In September every year, CTU receive new students' documents under rules. In October, Rectorate Board and Dean Board of CTU organize meetings to introduce

new students about common information of CTU, about teaching and learning process, guides to use libraries, about student-life, etc.

2) At College and Department levels**:** COET, first, arranges accommodations for new students in dormitory inside with priority policy or in boarding houses outside. Second, organizes classrooms: arrange a learning counselor. Third, for new first year students, a learning plan of 1^{rst} semester is available. Then they are conducted to design a general learning plan. Students are also conducted to receive support services: student/academic affairs, guides to use resources at Learning Research Center (LRC), to use computer network, to register courses, physical training and sport. In October, there are some meetings between new and old students to exchange information or experience about different domains *(Exh.08.02).*

Every year, COET receives about 500 students, including about 100 students of for Electrical Engineering Program. Table 9 presents the numbers of new enrolled students from 2007 to 2011. The program time is 4.5 year program, so the total number of students of the program is over 500. The percentages of female students vary from 5% to 10% because the program is rather technical.

Currently, electrical and electronic engineering programs has no international students. However, in other programs of Cantho University has many international students.

Table 19: New Enrolled Students of the Electrical Engineering Program

	Full-time			**Part-time**		
Year	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
2007-2008	136	5	141	1	0	1
2008-2009	130	3	133	0	0	0
2009-2010	120	3	123	0	0	0
2010-2011	150	3	162	11	1	12
2011-2012	89	0	89	0	0	0

Every year CTU assigned by the Ministry of Education and Training enrollment targets for each sector. However, as a result of the entrance exam, the number of students of electrical engineering and electronics industry has more or less than the target and the number of female students more or less or may not have.

Table 9 shows that in 2011-2012 the number of female students is 0, which means that this year no female candidates admitted to the electrical engineering and electronics.

Table 20: Total Number of Students of the Electrical Engineering Program (in the Last Five Years)

	Full-time			**Part-time**		
Year	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
2007-2008	531	21	552	1	0	1
2008-2009	555	22	577	1	0	1
2009-2010	583	23	606	1	0	1
2010-2011	605	14	619	11	1	12
2011-2012	569	07	576	11	1	12

CTU and COET will provide the best ways to improve the student admission process which is adequate and better.

8.3. The actual study load is in line with the prescribed load

The monitoring system (management software) of CTU and COET shows that the actual study load is in line with the prescribed load ***(Exh.08.04).*** Because the time lines of EEP under Regulation No 43/2007/QĐ/BGDĐT (MOET) at Article 6, under CTU's Academic Statute, total learning plan of the whole learning process, and registered course time on semester, so they are adequate for the actual study load is in line with the prescribed load and link to GPA.

At program level: The program includes 135 credits that can be finished in 9 semesters (on average 15 credits/ semester). On average, about 80% of students in the program graduate after 4.5 years. It is monitored via:

1) Lecturer's Handbook, plan of teaching and learning under Statute No 43 of CTU applied in the whole CTU;

2) Monitoring of officers for used classroom in every working day;

3) Teaching Dairy;

4) Course Evaluation Form;

5) The combination between Department of Finance and Department of Administration & Planning to review and make sure that the actual study load is in line with the prescribed load for payment.

At course levels: A semester contains 15 weeks (including a week for final exams). One credit is equivalent to 15 lecturing periods or 30 – 45 practical lesson/ lab works periods. One period is 50 minutes. In addition, students need to do assignments and reports at home. Counselors help students to build program learning plans that appropriate to students' abilities. A good student can register maximum 20 credits, while a under expected level student can register maximum 20 credits (***Exh.03.06).*** There are list of lecturer assignment, rate reports of progress for teaching and learning activities in week, month and at the end of semester via meetings or forums and there are periodically feedbacks from "Course Evaluation Form" ***(Exh.06.07).*** **A**cademic assistants inform rate of progress for teaching and learning activities between CTU, College and Department; plan of student assessment. To protect the actual study load is in line with the prescribed load against fake data, there is monitoring system with mentioned levels above. The monitoring system is very complex, so sharing information/data between parts is limited and this system needs to be improved better.

a) Strengths

- The students have passed through the competitive National University Entrance Exam (input).
- Majority of students are dynamic and studious and they learn new technique quickly.

b. Weaknesses

- The passing grades for the program are still low.

c) Action

- In 2012 and later, the university and college as well will have strategies to attract good students from high schools.
- In 2012 and later, the university and college will enhance the support for students in learning and teaching major courses.

9. STUDENT ADVICE AND SUPPORT

At CTU and in COET student advice and support are adequately with student progress monitoring system, academic advice and environment for students' life and studying.

9.1. There is an adequate student progress monitoring system

a) At CTU level**:** a student progress monitoring system is adequate.

- Department of Academic affair manages education activities basing on Academic Statute/Regulations: student documents, organization of training and education, schedules, education plan (*Exh.09.08),* grades and others *(Exh.09.02, Exh.09.04).*

- Department of Student Assistance manages learning activities basing on Academic Statute/Regulations as student profiles/documents, study workload student progress academic warning for student weaknesses, student assessment and beside of implementation for student socio-support policies, other support services as dormitory, outside student life and employability consultancy,….*(Exh.09.05, Exh.09.06& Exh.09.07).*

- Center of Software manages student's registration of courses, learning results *(Exh.09.08)*

b) In COET level: Academic officer/assistant, academic advisor/counselors (*Exh.09.01& Exh.09.03)* (as system), Communist Youth Union, class organ, lecturers directly help students in aspects of life and learning.

- **Basing on ELOs, lecturers** identify goals for what their students will learn over time, measure their students' progress toward meeting these goals by comparing expected and actual rates of learning, and adjust their teaching as needed. Lecturers also help students to receive more appropriate instruction and more informed instructional decisions and higher expectations for students by teachers *(Exh.09.01, Exh.06.15, Exh.09.02, and Exh.09.04).*

- COET has monitoring activities such as: student services/advices, student progress, pass rate and drop-out rate, feedback from labor market and alumni, research performance of students, student evaluation, course and curriculum evaluation, research evaluation service evaluation, assurance student assessments *(Exh.08.04).* There is also a need for improving this system better.

CTU regulations students must attend 100% of the class hours for: practical courses, experiment, off-campus internships, National Defense Education, Physical Education; must attend at least 80% of the time for the theory. Students missing class more than the specified time will be suspended and got an F score on the transcript. Students attendance is monitored by lecturers *(Exh.03.06).*

9.2. Students get adequate academic advice, support and feedback on their performance

For adequate academic advice, there are some of advices:

- Students get directly advice from lecturers and advisors right academic directions of private developments through lectures or meetings between students and lecturers or the university and college *(Exh.06.15, Exh.09.02).*

- Students get results of Workshops every two years on 2 self-study periods/classes, Workshop on learning/academic advisors, Workshop on teaching methods. Youth Union undertakes "activities of learning group".

***For support and feedback on performance*:**

- According to "Academic Regulation", students who get bad learning results in each semester will be informed their learning results through a system called "Academic Warning" so that they can adjust their learning plan and that result is also informed to students' family *(Exh.05.09).* Supports help students with "Academic Warning" to have a good chance to adjust their learning.

- According to the achievements of courses and policies for student learning, the university, companies and social organizations give the scholarships/employability *(Exh13.01)* for excellent students in each semester. CTU and COET give them adequate academic advice, support and feedback, because students have to be familiar with learning with researching at university level unlike high schools. To achieve ELOs, CTU and COET must help them with many different ways.

9.3. Mentoring for students is adequate

Mentoring for students is adequate at CTU and in COET. Mentoring for students is the most important factors that help determine the success of students' education. It **consists of some levels as follow:**

1) ***At university level***: like 9.1., and from the beginning of academic year, there are meeting between Rector, Deans or Director of Learning Resource Center, Head of Department of Academic Affairs, Head of Department of Department of Student Assistance to inform common activities at university and other channels to exchange information students and university *(Exh.09.01, Exh.09.02, Exh.09.04 & Exh.09.07).*.

2) ***At college and department level,*** meetings of the College, Department with new students is carried out thorough at the beginning of each new academic year in order to provide useful information about the school, College and Department, educational programs, laboratories, internal Statutes, appropriate assessment methods, studying methods at university, etc *(Exh.09.02 and Exh.04.08).* Counselors instructed students to comprehend the program curriculum. They also help their students to make a Full-course Study Plan that activates students' active learning. Counselors for each group should know thoroughly capacity and circumstances of each students to have appropriate guidance. Counselors also learn about the thoughts and aspirations of students to help students overcome these difficulties. For students of the old courses, the Department held a meeting to all students at the beginning of every academic year to listen to their feedback and comments, in order to support their learning *(Exh.09.04).*

3) **At society-family levels:** Like 9.1., CTU and COET combine with student's family to exchange learning status of students to direct them. For example, "Academic Warning" help CTU COET and family together resolve students' problems *(Exh.05.09).* Besides, CTU and COET ogran meetings with companies-labor market with students is carried out through needs of training and employability for students *(Exh.09.04).* CTU and COET have plan to upgrade advisors and have more workshops on student counseling task in order to enhance the responsibilities of academic counselors in the credit-based training system.

9.4. The physical, social and psychological environment for the student is satisfactory

For students at CTU and the College, the physical, social and psychological environment is satisfactory (Feedback of 'Course Evaluation Form" and "Comments for Study Program). **With a** good environment (good halls, classrooms, laboratories, dormitories…) students get the best learning results.

1) For physical environment: during school, pupils live with their family and at university students live in dormitory or in boarding houses. Here they themselves live far form house, so CTU and COET provide students with good conditions for living. CTU considers the accommodation needs of poor students. CTU has used around 28,537 m^2 for dormitory building with 30 blocks (for 5.000 students). CTU is building 8 new blocks (for 5.000 students) and new stadiums and so on *(Exh.09.03).*

2) For social environment: CTU has many public activities: Green Summer Campaign, Voluntary Blood Donation. Besides, Traditional Music Contest, Traditional Sport Contest always organized for encouraging students' spirit *(Exh.09.09).*

3) For psychological environment: Students are supported from Advisers, Youth Union and Department of Student Services to have good psychological life to study throuth consulting club, health topics, physiological topics…*(Exh.09.10).*

This activity should be maintained throughout the year for all students at CTU.

a) Strengths:

§ Students are adequately provided with academic, material, mentoring and financial support.

b) Weaknesses:

§ Students have not received a continuous support from their academic advisors those who are overloaded with teaching and research.

§ The training-workshops for academic advisors are still limited.

c) Actions:

§ In 2012 and later, the university and the college will reduce workload for lecturers so that they can give the continuous supports for their students when needed.

§ In 2012, Department will have a training - workshop to train for academic advisors.

10. FACILITIES AND INFRASTRUCTURE

The University and the College as always pay so much attention to the quality of training, so CTU and COET try to invests modern facilities and infrastructure and upgrade them. Facilities and infrastructure strongly and appropriately meet the needs of teaching and learning. Every year, they are also updated, cared and regular repaired. There are enough rooms for teaching and learning and the room size is suitable for large and small classes or study groups *(Exh.10.01)*.

10.1. The lecture facilities (lecture halls, small course rooms) are adequate

CTU is interdisciplinary university (including 14 schools/colleges, 3 institutions and 9 Centers and places where students do experiments). The teaching facilities are adequate, beside of using halls and classroom in college, lecturers and students more use the common teaching facilities of CTU. The good teaching facilities lead to teaching and good learning environment.

1) For university level, CTU has two big halls (more than 1000 seating capacity), at Learning Resource Center there are two modern halls, and in very units there are some big or small halls and common classrooms that lecturers and students of COET can use them for teaching and learning activities. (*Exh.10.01, Exh.10.08)*

2) **For college level,** the College of Engineering and Technology allocated with 17 rooms (about 1330 seating capacity). It also has a 100-seat hall with full of audio-visual equipment suitable for scientific seminars, essays and thesis reports *(Exh.10.02)*. Equipping with full facilities as large/small course rooms and lecture halls meets the requirement of teaching and learning in new methods in order to ensure the training quality.

A facilities management division was commanded by a vice dean dedicating to the maintenance and upgrading of facilities of all departments. Maintenance and upgrading of facilities is done regularly, the budget from last year (Exh. 10.10) (Exh. 10.11). Periodically repair and update new facilities in the course rooms to ensure the quality of learning and teaching.

10.2. The library is adequate and up-to-date

The library system of CTU and COET is adequate and up-to-date. The library system is very important parts of teaching and learning conditions. Library provides sources of information the readers and researchers. It helps the University to complete the task of training the human resources and fostering talents for the country *(Exh.10.03)*.

At University level, the Learning Resource Center of Can Tho University is one of the most modern libraries in the whole country. It provides for the readers more than 250,000 printed copies, 15 electronic databases in Vietnamese and English versions, 559 computers linked internet and many various newspapers, magazines, audio-video materials and so on (*Exh.10.01, Exh.10.08)*

At College level, besides, the College also has a two-room library with 100 seats, containing 15,000 volumes and 45,000 collections and it is directly connected with the University Learning Resource Center to meet the needs of reference to the documentation of lecturers and students. These sources of materials are annually updated and supplemented through the actual needs of the unit. Moreover, basing on the comments of students to supply more reference books, textbooks for their study in the "Course Evaluation Form" periodically done in two semester of each academic year, the University and the College will set up the plan to buy them. The College will add and update more new sources of materials appropriating with professional training (*Exh.10.01).*

The book purchase is done two times per year in two plans.

The first, each faculty suggest type books , a library of COET and learning resource centers aggregate requirements, recommended the school to buy books.

The second, through the quotation of the company offers books, the library moved to each faculty selection, feedback from faculty synthesis notified the school library for books

Funds for the. purchase of books from the school's budget with total funds is about 33.650 USD (Exh.10.09)

10.3. The laboratories are adequate and up-to-date

The laboratory system of CTU and COET are adequate and up-to-date. Beside of learning theory, students must practice outside and in laboratories to make perfect

1) For University level, students can use different laboratories at CTU and are visited the laboratories from companies and other institutions.

2) For College level, the Department of Electrical Engineering currently has 8 laboratories with each size of 64m^2 including Electrical Engineering Skills Lab, Electrical Material Lab, Industrial Power Lab, Electrical Measurement Lab, Electric Machinery Lab, Power System Lab, Relay Protection and Electrical Engineering Lab *(Exh.10.04).* Overall, the number of laboratories in the department can meet the need of training at undergraduate and postgraduate level as well *(Exh.10.05).* The College usually updates and supplements new and modern facilities which satisfy with the need of teaching method: theory and practice combination to improve the big number of students on each limiting machine to ensure the quality of practical tests.

Investment funds for lab equipment from many different sources. Major funding from the budget of the University and funded through the partnership program *(Exh.10.10), (Exh.10.11), (Exh.10.12).*

10.4. The computer facilities are adequate and up-to- date

At CTU level and in COET there is an adequate-up-to-date computer system. The computer rooms are established and updated in order to meet the increasing need in using information technology for teaching, learning and researching of lecturers and students as well.

1) For University level, CTU has Information and Network Management Center. It provides computer services in the whole CTU to share information (Internet, website). In each unit there are private computer rooms. Besides, CTU has 34 public rooms with 1000 computers (with total area of 2,044 m^2). In Learning Research Center there are over common computers *(Exh.10.05).*

Wifi system covers throughout the univesity area. Budget allocation of the univesity and funded through cooperative programs *(Exh.10.10)*

2) At College level, the College of Engineering and Technology has three computer rooms with a total of 90 machines are sufficient for practice teaching of specialized subjects. Besides, the College also puts 90 computers at the library and other 20 at the department for learners to refer to the documentation, research and free use. These computer

rooms are always cared, repaired and replaced every year by the Information and Network Management Center which is responsible for designing, managing and developing the infrastructure of computer system in Can Tho University. Besides, it also helps other Colleges/Schools to establish and develop their own internal network systems and Websites (*Exh.10.05).*

10.5. Environmental health and safety standards meet requirements in all aspects

CTU and COET very consider environmental health and safety standards meet requirements in all aspects. To make a good living and learning environmental for students and staff, all related aspects are monitored under standards *(Exh.10.06).*

1) For University level: a) Environmental health standards under Can Tho City/National Statute**.** In dormitory, there is a Public Health Station. Students are periodically checked health problems (in first/last academic year) and all students get Health Insurance Policy. Hygiene conditions around dormitory and in any of place, where there are teaching and learning activities, WCs in which sanitation workers undertake. The sanitation staff of the university is responsible for planting green trees, collecting garbage around the campus and so on to ensure that the environment both in and out of the classrooms meet the need for learning and teaching. ***b)*** Environmental safety standards in common classrooms and laboratories are controlled regularly under Safety Statute There are CTU doorkeepers at 3 main gates, watchmen in each bock and in dormitories. CTU has policy of safety at work and foodstuff.

2) For College level, a) Before starting study at Can Tho University, all students have to pass a medical check-up to ensure that they all meet the health requirement for their study *(Exh.10.07).* b) For the staff, who are also checked the health problems as they are recruited and periodically checked during the working time according to the Statutes of Labor Law *(Exh.10.07).*

.+ In August every year, the College has a plan for equipping and adding new labor safety facilities such as gloves, blouses, helmets for laboratories, manufacturing factories, etc to make good working conditions for those who work here. Each College/School has its own staff for doing this task. The students also get some bonus to encourage them to participate in environmental protection activities.

+ The University and College undertake to comply with the Statutes on fire safety. Periodically review and update the unsuitable conditions to immediately provide new things ones which meet the current situations. The College will add and update more new sources of materials appropriating with professional training.

a) Strengths

§ Facilities of the University, College and Department are enough for use and meet the needs of training, teaching and doing research.

b) Weaknesses

§ The teaching support devices used at large frequency have degraded and damaged so it affects to some extent the improvement of teaching methods.

§ Generally, facilities for practice and study were periodically not updated yet.

c) Actions

§ Invest and upgrade periodically modern support devices to meet the need for improvement of teaching methods.

§ Invest gradually modern equipment for large laboratories to focus on postgraduate training and doing research (plan from 2012 to 2020).

The college will propose the university to buy more equipment for the labs.

11. QUALITY ASSURANCE OF TEACHING AND LEARNING PROCESS

From 2003 up to now at CTU and in COET Internal Quality Assurance System are working and developing, beside of Quality Assurance management, CTU and COET pay so much attention to accreditation and improvement of courses and curriculum.

11.1. The curriculum is developed by all teaching staff members

Through the opinions from all teaching and researching staff, Scientific and Training Committee decides to develop curriculum, because the teaching staff are the experts on curriculum so they clearly know about the strengths, key and weaknesses points from teaching and learning process. Almost teaching staff members provide their opinions in designing ELOs, program structure and contents and develop the Electrical Engineering Curriculum with content of courses updated every year. The curriculum must be reviewed and revised periodically. In the department's meeting*(Exh.11.01.*, the faculties adjust and update the curriculum based on the development of current technology.

11.2. The curriculum development involves students

Like graduates also provide feedback for program development, students are involved in the curriculum development process via different channels Students, who learn how to learn to achieve ELOs of 03 knowledge and skill blocks, must clearly understand the program structure and contents. Students' evaluation on the courses *(Exh.06.07)* occurs by the end of each semester. Students fill in the course evaluation form after they finish a course. Based on results of the students' feedbacks, the lecturers and the department make appropriate adjustments Student-centered approach is used by lecturers in the department, so results of the students' feedbacks directly help CTU and COET adjust and develop curriculum structure and contents.

11.3. The curriculum development involves the labour market

The curriculum development has helpful opinions of labor market feedback (also alumni). Training objectives are satisfied by the labour market (Criteria 13 and 15) and ELOs clearly reflect the requirements of stakeholders (Criterion 1, Section 1.3). QATC of CTU has a system to collect the feedback opinions from labor market. From 2008 to 2012 via questionnaires basing on QA-AUN guideline for labor market (some CTU's alumni are also labor market), so CTU has kept a good relationship with labor market *(Exh.11.05.)*. At CTU Feedback system in plan improve to work better.

11.4. The curriculum is regularly evaluated at reasonable time periods

In COET there is QA team, from 2008 up to now, COET implements Internal self-assessments of 12 study programs under AUN standards and according to PDCA cycle and complies circle of 4 or 5 years of Decision N^{o} 29/2008/QĐ-BGDĐT (MOET) *(Exh.11.07)*. As objectives, ELOs, structure and contents of curriculum are designed to reach satisfaction of stakeholders (criteria 1, 13 and 15) that are changed, so the curriculum needs to be evaluated and is regularly evaluated at reasonable time to increase the quality of curriculum. Evaluated system of curriculum at CTU in last 5 years: in 2007 EEP is evaluated and changed from form of academic year training to credit-based training system. In 2010, EEP is revised 2nd time. Course evaluation is occurred in every semester to help CTU and COET and lecturers have base to improve the contents and teaching methods as well. From 2009, CTU used QA-AUN criteria for self assessment of program under circle of 4 or 5 years *(Exh.11.06)*. Activities of curriculum evaluation are considered to balance for reasonable periods of time.

11.5. Courses and curriculum are subjects to structured student evaluation

ELOs, structure and contents and teaching and learning strategy those are things students and graduates must achieve during their learning process. Student evaluation is based on courses and curriculum. Like criterion 5, student assessment: student progress assessment and student exit assessment is how do students and graduates to learn courses and

curriculum. If quality results of courses were good, they lead to successes of curriculum and of program Course Assessment *(Exh.02.08.)*. **Mid-term assessment**: oral, exercises, multiple choice tests, practice in pair or in group, writing, homework, practice in the laboratory report and total marks are under 50%. Depending on the purpose and requirements of each course, learning object, lecturers have appropriate forms of assessment and ensure compliance with the principles of objectivity and accuracy. **Final test** with knowledge covers all courses and total marks are >50%

For curriculum, CTU and COET have monitoring system for the whole teaching and learning process. This system informs student's progression to adjust learning plan. This system also provides students and family about weaknesses levels of student (Academic Warning). At that time both 2 sides (CTU and student with family) find out the best direction to improve. **Students ranking** is also based on the total credits accumulated, not on the academic time of students *(Exh.08.04).* Relative teaching and support staff (QA staff, training bureau assistants, CTU inspectors) involved in examination. CTU and COET must adjust assessment activities of this system better.

11.6. Feedback from various stakeholders is used for improvement

ELOs are transferred into the program, so different feedback satisfactions of stakeholders make basic total-complete data for improvements *(Exh.13.01, Exh.13.06, Exh.11.02 and Exh.11.03)*. Like related 13 and 15 criteria, Feedback from students, lecturers, and labor market are the most important because they are those who directly teach, learn and use the training results/products. **At CTU,** feedback is periodically collected from different stakeholders: Student feedback for course in every semester, feedback from graduates before they receive bachelor, feedback from alumni and labor market and teaching and support in different adequate periods. In order to make the graduates meet the demand of the labor market, the adjustments on the curriculum and the content of courses are based on feedback and information from the work market, alumni and students. The Department of Electrical Engineering collected feedbacks via different methods. CTU considers involving other stakeholder for development and improvement of course and curriculum.

11.7. The teaching and learning process, assessment schemes, the assessment methods and the assessment itself are always subject to quality assurance and continuous improvement

CTU has Internal QA System at 2 levels: institution and study program. Their organization and activities concentrate on all the teaching and learning process, assessment schemes, the assessment methods and the assessment itself processes. Relative processes make a total result of program, so QA activities are designed on their Relative processes. For every part of these processes in which there are different QA form/way. For example: students' assessment QA including variable forms: tests, assignments, projects, group work, etc. bases on the features of courses (Criterion 5. Student Assessment) *(Exh.05.04).* A QA system needs to have experience to monitor QA activities for all areas in institution.

a) Strengths:

- The contents of courses are adjusted and the curriculum are reviewed and revised periodically.
- Students' evaluation on the all courses is occurred every semester.

b) Weaknesses:

- The information of feedback from students was sometimes not used by lectures to adjust or update courses, teaching methods.

c) Actions:

- In 2012 and later, the university and college will have policies to attract the involvement of the labor market in giving their feedbacks for curriculum improvement.

12. STAFF DEVELOPMENT ACTIVITIES

CTU and COET always pay attention to strategic plan of recruitment, employment, upgrading and development.

12.1. There is a clear plan on the needs for training and development of both academic and support staff

CTU and COET have policy and clear plans on the needs for training and development of both academic and support staff *(Exh.04.02, Exh.12.03).*

In QA activities of CTU, there are short and long term plans of training and development for both academic and support staff. Staff development activities are parts of human resource management policy of the Engineering and Technology College and parts of the Vice-Deans will be in charge of personnel development activities (*Exh.12.04).* As long term plan, there are teaching staff of Department to be candidates of PhD. degree in Polland, Norway, Korea and Germany. Others are pursuing Master degree in domestic as well as foreign country. Every years, academic and support staff can plan to attend some short necessary courses which are improve staffs' knowledge and skills in specific major as a short plan. (Exh.12.01)

12.2. The training and development activities for both academic and support staff are adequate to the identified needs

CTU and COET implement/comply policies and plans to train and develop both academic and support staff that are adequate to the identified needs *(Exh.04.02, Exh.12.03).*

To deploy a study program**,** both academic and support staff play very an important role, so training and development for them have to be implemented for ensuring the teaching and support activities, then these staff will be inherited in the future. The College has linked with the Department of Personnel Affairs under regulations on recruitment and development of staff quality of Can Tho University to satisfy needs of academic and support staff in the strategic plan *(Exh.12.02), (Exh.12.03), (Exh.12.04).* The training and development activities for staff have to increase to have good staff *(Exh.12.05).*

Academic and support staffs attend courses which are organized by technical domestic and foreign universities or technical companies. Another way, Department invites some technical companies to share new technology in CTU. For example, academic staffs plan to attend Refrigeration Techniques; academic and support staffs attend Mitsubishi and Siemens training courses on PLC in CTU. Every year, there are 3 academic staffs in Department of Electrical Engineering planed to attend the training course and other staffs who are invited attended training courses (Exh.12.6). The budget for training and development including sponsoring staff for postgraduate programmes are taken from the annual recurrent budget of the CTU and scholarship resources at domestic and abroad.

a) Strengths

- There are clear plans and regulations in recruiting and developing staffs.
- Staffs are made good conditions to develop and improve their skills.

b) Weaknesses

- Lack of support staff, in some laboratories lecturers are in charge of support staff's tasks.

c) Actions

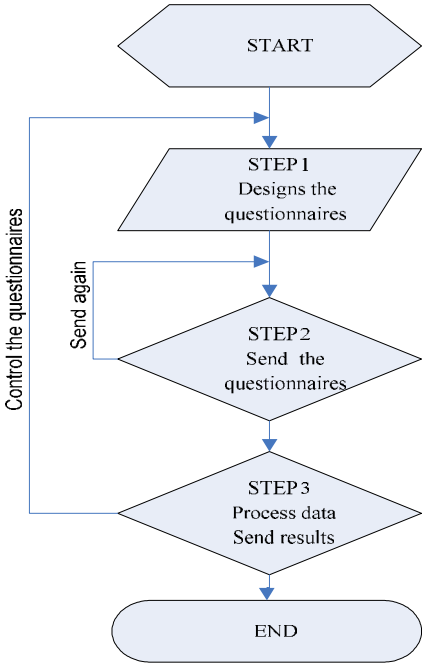
- In 2012 to 2017, the college will adjust the plan to develop resources according to the actual situation.
- In 2012-2017: the college will set a plan to increase the percentage of staff's qualifications.

13. STAKEHOLDERS FEEDBACK

At CTU and in COET, there is a system to collect stakeholder feedback; however, collection feedback from labor market and alumni is not a good point in this system.

13.1. There is adequate structured feedback from the labour market and alumni

Figure 8: Flowchat for structured feedback from the labour market and alumni (for 13.2&13.3)



CTU and COET *have activities to collect feedback opinions from the labour market/alumni about study program* and as adequate structured feedback system *(Exh.13.01, Exh.11.02, and Exh.11.02)*.

These activities are very difficult, because CTU and COET receive opinions outside institution, so they need to have adequate organization.

For organizations: Quality Assurance center and Quality Assurance Team (QAT) together design common stipulated points (as rules are deployed in the whole CTU) for feedback from the labour market/alumni and process for collecting these feedbacks (see Quality Assurance Handbook). QAC consults with QAT and together design a common plan basing on common process above. Collecting feedback opinions is a very necessary activity for study program improvement. COET also has plans to keep relationship with alumni and labor**.**

For activities: there are some main steps:

Step 1**:** QAC designs and revises common questionnaires basing on QA-AUN at program level guidelines and there is a private questionnaire in each QAT team.

Step 2: The survey is currently carried out, by QAT, mainly through the postal system and by hands or by phone, by e-mail or assistants of QAT directly come to employers to collect opinions. When there is a need, the College sends questionnaires to companies and enterprises to collect feedback and comments *(Exh.13.02).*

Step 3: CTU or COET (private questionnaire forms) process data and provide results of statistics to use for development and improvement. The Department of Electrical Engineering is more sending the survey to labor market and alumni, and designing survey on the department's website to get feedback from the labor market and alumni online *(Exh.13.08).*

13.2. There is adequate structured feedback from the students

CTU and COET have *activities (as adequate structured feedback) to collect opinions from student about courses* and as adequate structured feedback system**.** Program ELOs clearly express the requirements from stakeholders and covers both generic and specialized skills and knowledge *(See criterion 1)*. Course ELOs are modules/components of program that students must achieve them, s***o it is very necessary to have a structured feedback system from students***. ***For organization:*** QAC and QAT have Common Stipulated Points (as rules are deployed in the whole CTU) for feedback from students and Process of collect feedback (see Quality Assurance Handbook). ***For activities:*** In 2001 deployed activities to collect opinion from students and then stopped. Sine 2006, the QAC and QAT have collected students feedback on courses. In 2009, the survey is carried out largely over 1.700 courses/semester (about 200.000 questionnaires) in the

whole university through a questionnaire called “Course Evaluation Form”. There are some main steps:

***Step 1*:** QAC has some very necessary preparation, such as collection of numbers of courses (student/lecturers/ courses codes); designing or revision of questionnaires, printing, etc.

Step 2: QAC changes questionnaires to QAT. Lecturers or Academic assistant bring to classroom, where students answer questions at the end of course. Beside of answer via questionnaires, students can submit/write more their feedback via email to staffs, teaching staffs, department and college leaders, or the Board of Rector of the university.

Step 3: QAT collects questionnaires again and returns them to QAC. QAC processes data and provides results of statistics to use for development and improvement for a course. Results are changed to College with statistics at College level. QAC also changed to Rectorate Board with statistics at University levels. QAC only sends to lecturers a closed envelop with rates of private results of each criteria for course in which student provided their helpful comments/opinions *(Exh.13.04, Exh.13.05, and Exh.11.03)*. An adequate structured feedback from the students will be replaced next time by online.

13.3. There is adequate structured feedback from graduates

CTU and COET have ***an*** **adequate structured feedback** ***to collect opinions from graduates*** and as adequate structured feedback system. Program ELOs clearly express requirements from stakeholders (…graduates) and covers both generic and specialized skills and knowledge (See criterion 1). Graduate spent its student life by/through the whole program, s***o*** it is very necessary to have a structured feedback system from graduates ***(Exh.13.06). For organization:*** QAC and QAT have Common Stipulated Points (as rules are deployed in the whole CTU) for feedback from graduate and Process of feedback collection (see Quality Assurance Handbook). The university has organized Alumni Association and Students Association Branch in each college. Besides, the college also held annual traditional alumni meetings of Electrical Engineering program. Through the meeting, alumni contributed their ideas for the program and training mission of the department through comments and questionnaire. ***For activities:*** Sine 2009, in the whole university feedback from graduates through a questionnaire whose name called “Comments for study program” (Exh.13.07). There are some main steps:

***Step1*:** QAC has some very necessary preparation, such as collection of numbers of graduates; designing or revision of questionnaires, printing.

Step 2: QAC changes questionnaires to QAT or QAC and QAT-Academic assistant work together on the day before the graduation ceremony graduates answer questions, when all graduates return the university to make registration for the ceremony.

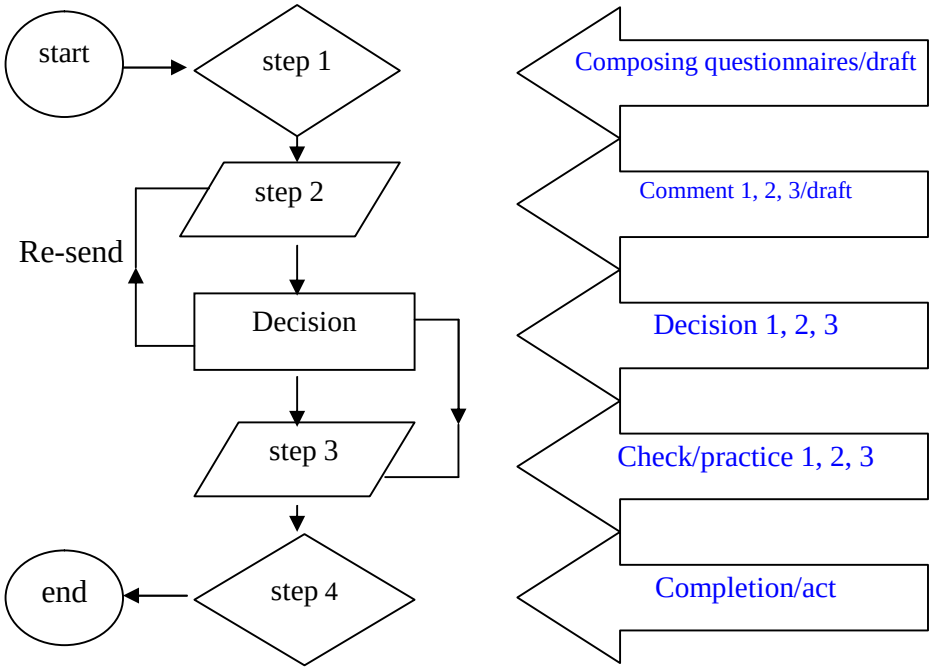
Step 3: QAC or QAT collect questionnaires. QAC processes data and provides results of statistics to use for development and improvement for a program. Results are changed to College with statistics at College level. QAC also changed to Rectorate Board with statistics at University levels. An adequate structured feedback from the students will be replaced next time by online. Activity has to improve, because its results are not high.

13.4. There is adequate structured feedback from the staff (teaching and support)

CTU and COET have adequate structured feedback from leaders, the teaching and support staff via questionnaire, meeting, workshop, conference, forum via online. The (teaching and support) staff, who participate in the whole teaching and learning process of study program, are play a very important role in feedback to development and improvement for program ***(Exh.13.03)*** through meetings of specialized discussion, training workshops on teaching methods, annual staff conference, meeting on

writing/composing manual, textbook or schoolbook, research conference and other. Besides, every week, the department has a meeting with all staffs so that they can show their opinions and proposals to all relevant issues in the department. During work, staff can exchange to each other and to leaders about their ideas via small seminars or emails whenever and wherever.

Table 9: Process and quality of composing of questionnaires

PDCA process	Description
Plan - Identifying aims, objectives - Necessary needs; - People/Board, - Rules, policies; - Tools; - Budget.	
Do Set up content and questionnaires	
Check - Comments 1 to n - Practice	
Act/Adjust - Edit 1, 2 …n	

a) Strengths

- § Department of Electrical Engineering has a good relationship with the industrial sector that facilitates the feedback system so much.
- § The university has QATC that plays a consultative role in building the system to get feedback.

b) Weaknesses

- § No funding for implementation of alumni and labor market surveys.
- § The number of responses collected from stakeholders is low.

c) Act

- § In 2012 and later, the university has to allocate funds and build a system for surveys from labor market.
- § In 2012 and later, the department will design a forum to receive more feedbacks from stakeholders.

14. OUTPUT

After progress monitoring, educational leaders/managers pay attention to qualification of output or achievements of ELOs of program.

14.1. The pass rate is satisfactory and dropout rate is of acceptable level

CTU and COET, for EEP have the pass rate is satisfactory and dropout rate is of acceptable level basing on number of graduates yearly *(Exh.14.01)*. Needs of labor market for EEP graduates are very high. In training plan, pass rate and rate of graduation is adequate to reach to target. Basing on data of previous years, graduation rate is about 90%

and there was no remarkable change of this rate in recent years. In general, quality of graduates is satisfactory to the college and department. The number of good and excellent graduates is high.

Table 21: Pass rate and drop out rate show educational results of EEP reach to ELOs.

Academic year	Size cohort	% first degree after			% dropout after			
		3 year	4 year	>4 year	1 year	2 year	3 year	>3 year
2000-005	102	0%	0%	76,5%	8,8%	1,0%	1,9%	11,8%
2001-006	80	0%	0%	88,8%	0%	2,5%	0%	8,7%
2002-007	90	0%	6,7%	75,6%	3,3%	1,1%	1,1%	12,2%
2003-008	94	0%	22,3%	59,6%	4,3%	2,1%	11,7%	0%
2004-009	107	0%	0%	90,7%	0,9%	1,9%	6,5%	0%
2005-010	107	0%	1,7%	81,0%	7,4%	2,5%	7,4%	0%
2006-011	136	0,7%	50,4%	23,4%	25,5%	0%	0%	0%

Table 21 shows the results of graduate courses from 2000 to 2011 which from 2000 to 2010, the Curriculum of Electrical Engineering Program is 4.5-year, so graduation rates of these courses will be high after more than four years. From 2006 to 2011, the Curriculum of Electrical Engineering Program is 4-year, so graduation rate of students is high after 4 years.

Next time COET will increase QA activities to keep the pass rates above. Curriculum of Electrical Engineering Program

14.2. Average time to graduate is satisfactory

EEP is deployed basing on credit-based system, so actual average time to graduate is satisfactory**.** Its flexible and preeminent of credit-based system is to help students to have right private plan and to decide their graduated time *(Exh.08.04).* Because credit-based system brings benefits students not only time of graduation, but also money and others. The average time to graduate is often 4.5 year (09 semesters) or less than. Because the study plan of students is built 4.5 year for tranning programs, so that the students can graduate on time or early 4.5 year or later, which is depended on the ability studying of students. Next time COET uses flexible and preeminent and increases consultant activities for student to have autonomous decision for graduation time.

14.3. Employability of graduates is satisfactory

Needs of labor market for EEP graduates are very high, so employability of graduates is satisfactory *(Exh.14.02)*. Because results of surveys for graduates and labor market. They show very high rates of employability *(Exh.14.02)*. Basing on feedback of alumni, most of them have jobs which are in accordance with their graduate degree. Many of them can prove their capacity that meets the requirements of the companies. Recently, many employers contact the college to directly recruit employees, such as Long Thanh Plastic, CP Group, Western region electro-conductivity… Besides, graduates also look for jobs themselves and contact the department when they have jobs. Before the graduation ceremony, the college collects graduates feedback and count the number of employed graduates. Most alumni have jobs which are in accordance with their graduate degree. COET should have to plan to support students after graduation.

DoEE has done the surveys from graduates of electrical engineering with 166 sample questions on employment of graduates as table 22.

Table 22: Evaluation of alumni employment

Number	Survey contents	Rate (%)				
		1	**2**	**3**	**4**	**5**
1	He/She has a job after graduation: 1) 6 months; 2) 12 months; 3) 24 months; 4) 36 months; 5) Do not have a job	76.73	11.95	5.66	4.40	1.26
2	Why He / She found a job, due to: 1) Learning Resources; 2) Experience; 3) Charisma of CTU School; 4) Adaptability; 5) Other	24.68	9.74	12.34	35.71	25.32
3	Agency of his / her work is: 1) State agencies; 2) Private enterprises; 3) Foreign enterprises; 4) Venture capital abroad; 5). Other	57.59	21.52	8.86	5.06	6.96
4	He/She is working properly with your professional 1) Yes; 2) Close; 3) Training; 4) Advanced; 5). Different expertise.	55	30	5.63	3.75	5.62

As a result of feedback from alumni, the majority of the students are employed in accordance with professional: true professional (55%), approximation with expertise (30%). Only a small number of graduates working contrary to professional training (5.62%). Many students have confirmed their qualifications and meet the needs of the recruitment unit. Students' ability to find work in electrical engineering, electronics relatively quickly. They easily accepted by enterprises. Within six months after graduation (76.73%) alumni get a job (**Table 22**).

14.4. <u>The level of research activities by academic staff and students</u> is satisfactory

MOET and CTU policies are research activities to associate and to support teaching and learning activity. So the level of research activities by academic staff and students is satisfactory ***(Exh.14.04, Exh.14.06 & Exh.14.07)***. Because learning in University is research. Thus ELOs promote students life-long learning (Related criterion 1), students need to implement research with academic staff. Research is also an important outcome of the program. Since 2007, COET has 36 researchs of staffs at all levels and 19 researchs of students at institutional level, in which the department has performed 10 researches at institutional level, 01 research at national level, 01 research of students and 10 seminars such as table xx. Every year, the university has 70,000 USD budget for researches. In addition, there are sources from Ministry of education and training, from local government and other departments in the national system. Under MOET and CTU policies COET needs to research plan for students better**.** However, the number of student's research is less.

Table 23: The research of staffs and students of COET

Year	The number of researchs		Budget for researches			
	Staff	Student	Staff		Student	
			VNĐ	USD	VNĐ	USD
2007	4	0	75,000,000	3,572	0	0
2008	1	0	19,970,000	951	0	0
2009	4	3	80,055,000	3,812	28,460,000	1,355
2010	6	2	329,000,000	15,667	31,730,000	1,511

2011	11	4	1,867,000,000	88,905	95,050,000	4,526
2012	10	10	1,818,947,000	86,817	264,150,000	12,579

a. Strengths

§ Through the training management system of the university, the college, department and academic counselors can record easily the learning progress of students and the pass and dropout rate as well.

b. Weaknesses

§ In the system of student progress management, database is very different between schools/departments, so sometimes, it is difficult to trace their information when needed.

§ Research of students is just recently promoted and it is still limited.

c. Actions

§ In 2012 and later, the university and college will build up and update the database system to collect information when needed easier.

§ In 2012 & 2013, the college will propose solutions to encourage students to do their researches.

15. STAKEHOLDERS SATISFACTION

Like the results above of related criteria 13 about stakeholder feedback and criteria 14 about output are satisfactory and at acceptable level**.** That means graduates reach to ELOs**.** According to related criteria 1 (ELOs), 1.4 the expected learning outcomes clearly reflect the requirements of the stakeholders. Here we want to review satisfaction of following stakeholders:

15.1. Students' satisfaction (For course evaluation):

With pass rates of graduation (>80%) research activity results, rates of employability and rates of about 98% of students confirm that they find the courses satisfied *(Exh.15.01)*. Because students have to achieve contents of ELOs, especially have to accumulate results of course for graduation. The data of students' feedback through the "Course Evaluation Form" are collected systematically every semester and carefully analyzed. The Course Evaluation Form, a questionnaire, contains 11 items which reflect different criteria on the quality of a course, such as the course structure, lecturers, teaching content and teaching methods. The questionnaire has the scale of four. One stands for dissatisfied, two for satisfied, three for very satisfied and four for excellent. The results of data analysis on students' feedback show that in general students are highly satisfied with the quality of the courses. Data analysis results of two latest semesters are presented as examples of students' satisfaction on the Electrical Engineering Program. The results of the analysis of data that are sent to the concerned faculty so that they continue to develop strengths and improve the weaknesses, eg from student feedback, teachers can improveteaching methods, assessment methods, the ability to learn and study the logical structure of the program, etc. Although there is no specific comparison between the current and previous years of teaching and learning, but in the **table xx** of section 14.3shows the ability of the students are improved very well, such as the number of research students in 2012 increase more than before.

Students' satisfaction of one course via by course evaluation, semester I, 2010-2011

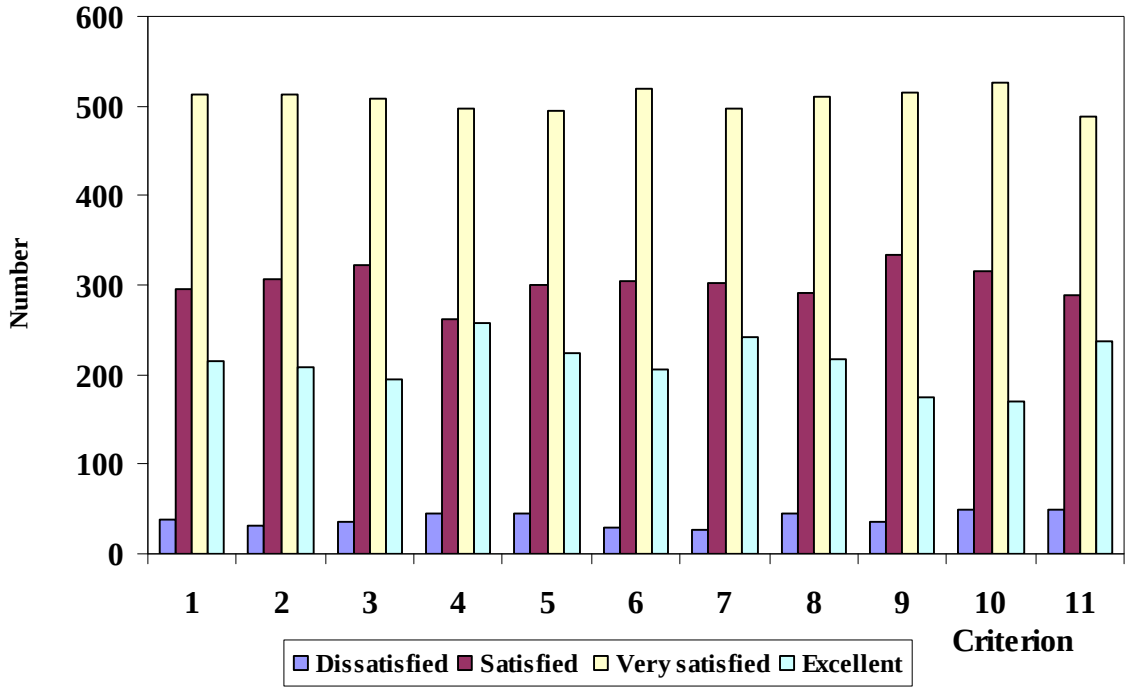
Table 24. Results of total satisfaction of course evaluation form of Dep. Level, semester I, 2011-2012

College of Engineering Technology *Number of questionnaires scanned: 1066*

Department of Electrical Engineering *Number of course class: 22*

Criterion	Dissatisfied		Satisfied		Very satisfied		Excellent		Aver-age
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	
1. Your level of satisfaction when registering this course (selected lecturers, schedule…)	38	3,56	295	27,67	513	48,12	215	20,16	2.84
2. Reasonability of the course structure (theory, practice, assignments, projects…)	32	3,00	307	28,79	513	48,12	209	19,60	2.83
3. Sources of learning materials, teaching and learning aids (books, magazines, laboratories, computers…)	35	3,28	322	30,20	509	47,74	195	18,29	2.80
4. Lecturers explain completely the learning requirements, ways of assessment, major contents…	45	4,22	263	24,67	498	46,71	257	24,10	2.90
5. Lecturers determine knowledge, skills and qualifications obtained after completing the course?	45	4,22	300	28,14	494	46,34	224	21,01	2.84
6. Teaching content meets the course outline published?	29	2,72	304	28,51	519	48,68	205	19,23	2.83
7. Level of assurance on the teaching plan (enough time, on schedule…)	26	2,43	303	28,42	496	46,52	241	22,60	2.89
8. Active teaching methods help students understand and develop knowledge easily?	44	4,12	290	27,20	511	47,93	217	20,35	2.84
9. Learning intensity (classroom activities, homework, use of the internet and library, group discussion…)	36	3,37	334	31,33	515	48,31	175	16,41	2.77
10. Level of result achievement in comparison with section 5?	49	4,59	316	29,64	527	49,43	171	16,04	2.76
11. Your level of satisfaction of teaching and learning this course?	49	4,59	288	27,01	487	45,68	238	22,32	2.85
Average satisfaction level of 11 items above	**39**	**0.04**	**302**	**0.28**	**507**	**0.48**	**213**	**0.20**	**2.83**

***Figure 10 : Satistaction level of student about course evaluation-at DL, semester I, 2011-2012* College of Engineering Technology**



Students' satisfaction of one course via by course evaluation forming semester I, 2010-2011

Table 25. Results of satisfaction of course evaluation, semester I, 2011-2012

Number of questionnaires scanned: 2439 *Number of course class: 53*

Criterion	Dissatisfied		Satisfied		Very satisfied		Excellent		Aver-age
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	
1. Your level of satisfaction when registering this course (selected lecturers, schedule…)	51	2,09	606	24,84	1302	53,38	475	19,47	2.90
2. Reasonability of the course structure (theory, practice, assignments, projects…)	40	1,64	636	26,07	1315	53,91	440	18,04	2.88
3. Sources of learning materials, teaching and learning aids (books, magazines, laboratories, computers…)	49	2,00	706	28,94	1248	51,16	430	17,63	2.84
4. Lecturers explain completely the learning requirements, ways of assessment, major contents…	48	1,96	581	23,82	1273	52,19	532	21,81	2.93

5. Lecturers determine knowledge, skills and qualifications obtained after completing the course?	47	1,92	642	26,32	1249	51,20	493	20,21	2.89
6. Teaching content meets the course outline published?	43	1,76	636	26,07	1313	53,83	442	18,12	2.88
7. Level of assurance on the teaching plan (enough time, on schedule…)	55	2,25	605	24,80	1238	50,75	538	22,05	2.92
8. Active teaching methods help students understand and develop knowledge easily?	52	2,13	670	27,47	1219	49,97	493	20,21	2.88
9. Learning intensity (classroom activities, homework, use of the internet and library, group discussion…)	46	1,88	733	30,05	1255	51,45	397	16,27	2.81
10. Level of result achievement in comparison with section 5?	44	1,80	684	28,04	1270	52,07	426	17,46	2.84
11. Your level of satisfaction of teaching and learning this course?	39	1,59	644	26,40	1253	51,37	490	20,09	2.89
Average satisfaction level of 11 items above	**47**	**1.92**	**649**	**26.62**	**1267**	**51.94**	**469**	**19.22**	**3**

Figure 11: Results about satistaction of course evaluation, semester I, 2011-2012

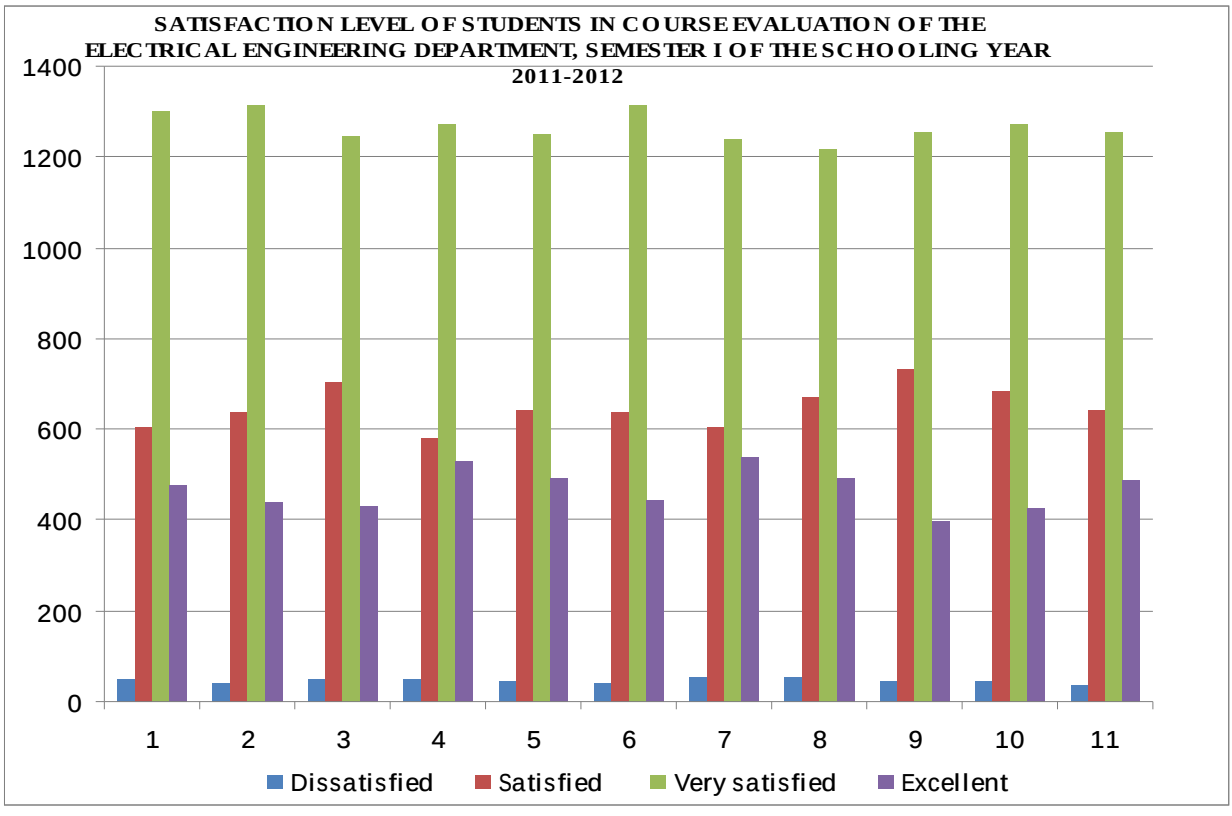


Table 26. Results of course evaluation form, semester II, 2011-2012

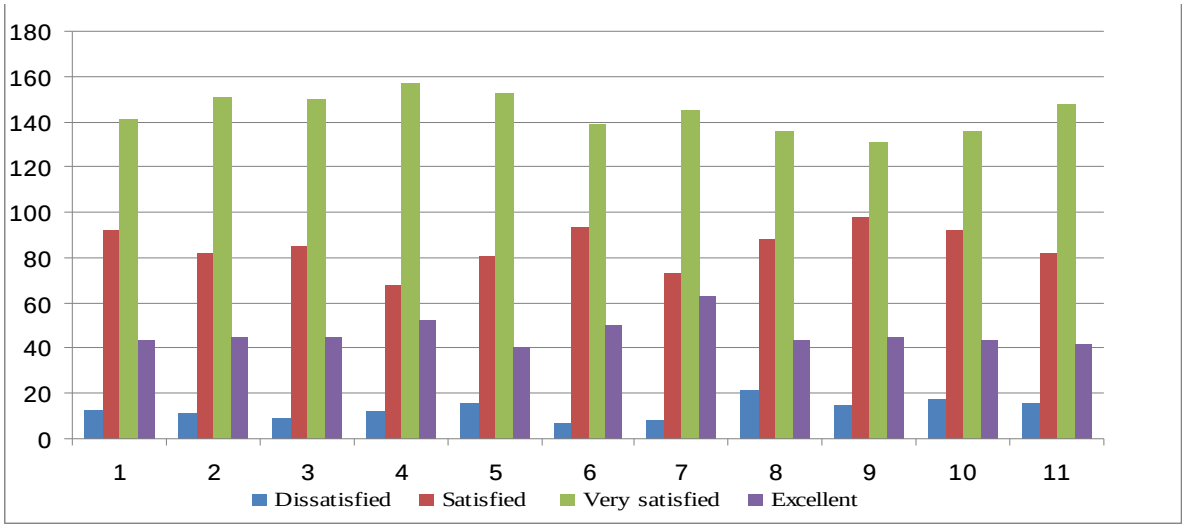
College of Engineering Technology *Number of credit: 3*

Course: Thermodynamics & Heat Transfer (CN139) *Number of course class: 3*

Number of forms scanned: 289

Criterion	Dissatisfied		Satisfied		Very satisfied		Excellent	
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)
1. Your level of satisfaction when registering this course (selected lecturers, schedule…)	13	4,49	92	31,83	141	48,78	43	14,87
2. Reasonability of the course structure (theory, practice, assignments, projects…)	11	3,80	82	28,37	151	52,24	45	15,57
3. Sources of learning materials, teaching and learning aids (books, magazines, laboratories, computers…)	9	3,11	85	29,41	150	51,90	45	15,57
4. Lecturers explain completely the learning requirements, ways of assessment, major contents…	12	4,15	68	23,52	157	54,32	52	17,99
5. Lecturers determine knowledge, skills and qualifications obtained after completing the course?	16	5,53	81	28,02	152	52,59	40	13,84
6. Teaching content meets the course outline published?	7	2,42	93	32,17	139	48,09	50	17,30
7. Level of assurance on the teaching plan (enough time, on schedule…)	8	2,76	73	25,25	145	50,17	63	21,79
8. Active teaching methods help students understand and develop knowledge easily?	22	7,61	88	30,44	136	47,05	43	14,87
9. Learning intensity (classroom activities, homework, use of the internet and library, group discussion…)	15	5,19	98	33,91	131	45,32	45	15,57
10. Level of result achievement in comparison with section 5?	17	5,88	92	31,83	136	47,05	43	14,87
11. Your level of satisfaction of teaching and learning this course?	16	5,53	82	28,37	148	51,21	42	14,53

Figure 12: Results of course evaluation form, semester II, 2011-2012



According to Table 21, pass rates of graduation (>80%) research activity results, rates of employability and rates of about 70% of students confirm that they find the courses satisfied ***(Exh.11.03).*** Because students have to achieve contents of ELOs, especially have to accumulate results of course for graduation**.**

According to Table 24-26, the data of students' feedback through the "Course Evaluation Form" are collected systematically every semester and carefully analyzed.

The Course Evaluation Form, a questionnaire, contains 11 items which reflect different criteria on the quality of a course, such as the course structure, lecturers, teaching content and teaching methods. The questionnaire has the scale of four. One stands for *dissatisfied,* two for *satisfied,* three for *very satisfied* and four for *excellent.* The results of data analysis on students' feedback show that in general students are highly satisfied with the quality of the courses. Data analysis results of two latest semesters are presented as examples of students' satisfaction on the Electrical Engineering Program.

In semester I (from August to December), school year 2011-2012, the department got **2439 feedbacks** from students on the courses of the program. The result of data analysis on the feedback shows that about 98% of students confirm that they find the courses satisfied, very satisfied or excellent (in which more than 50% of students state that the courses are very satisfied). Only about 2% of students are dissatisfied.

In semester II (from January to May), school year 2010 – 2011, the department go 1066 feedback from students. About 95% of students state that the courses are satisfied, very satisfied or excellent (about 50% students find the courses are very satisfied). Less than 5% of students said that they do not satisfy about the courses.

To be better for student feedback, CTU and CoET, Department help students to clearly understand contents of "course evaluation form" and meaning and aims of this activity.

c) Students' satisfaction for programme (by COET's questionnaire) with179 samples.

Table 27: Students' satisfaction rate

Criterion	Evaluation %			
	Level 1	**Level 2**	**Level 3**	**Level 4**
1. The program outcomes promote students to self-study, and awareness of life-long learning	5.62	37.64	47.19	9.55
2. Students clearly know program outcomes about knowledge that they achieve	5.03	39.66	42.46	12.85
3. The program contents show a good balance between pratices, knowledge	13.48	45.51	35.39	5.62
4. Students clearly know program description about knowledge, skills, and outcomes that they achieve	8.94	39.11	43.58	8.38
5. The program is coherent and all subjects and courses have been integrated	3.43	40.57	47.43	8.57
6. The program structure clearly shows the basic courses, intermediate courses, specialised courses and the final project, thesis or dissertation	3.35	25.14	43.02	28.49
7. Students can choose courses that they need, establish study plans in program.	2.26	24.29	42.37	31.07
8. Student contributed to built program thank to feedbacks.	12.92	45.51	30.34	11.24
9. Lectures help students working together, passioning for study, and improving skills	16.76	46.37	30.73	6.15
10. Lectures have adequate teaching methods in courses	11.73	47.49	34.08	6.70
11. Students meet academic supervisor to get advice conveniently	21.23	40.78	28.49	9.50
12. Leader, support staff are enthusiastic in providing a	13.41	46.93	32.40	7.26

satisfactory level of service				
13. Students have good services in library, computer facility, labs, dormitory	4.52	28.81	39.55	27.12
14. Students get support about community, psychology activities	3.35	46.37	36.31	13.97
15. There are a good student progress monitoring system	6.18	37.08	47.19	9.55
16. Students clearly know about assessment methods, assessment criteria	3.93	41.01	45.51	9.55
17. University and high school programs are coherent	9.50	44.13	36.87	9.50
18. Students have achieved knowledge that they expected	13.64	47.16	32.39	6.82
19. Students are confident in specialized knowledge, skills	14.77	44.32	34.66	6.25
20. Students participate in courses assessments annually	8.43	35.39	38.76	17.42
21. The results of courses assessments are clearly used to upgrade the program	7.95	47.73	35.80	8.52
22. Lecturer get the results of courses assessments and explain issues	3.95	42.94	42.94	10.17

15.2***. Graduates' satisfaction for programme***

Like criteria 13 & 14 and survey results via "Comment for study program" show Graduates' satisfaction. Because via contents of curriculum, teaching and learning strategy, research, rates of graduation, employability and results of survey show Graduates' satisfaction ***(Exh.13.07).*** The department gets feedback from graduates by the Program Evaluation Form. The form includes 32 items which are divided into 6 groups (e.g. Objectives and expected learning outcome, curriculum, input, quality assurance, output and graduates' satisfaction on the program in general). The 29 items are measured via Likert scale, one for very dissatisfied and five for excellent. Three items are yes/no questions.

The results of the data analysis from the recent school years (2009-2010 and 2011-2012) show that the graduates in general are satisfied with the program. Means of the item about the overall evaluation of the program in two school years are above three (three stands for satisfied). Means of other Likert scale items are also above three. QAC and QAT find out better ways in order to students' awareness is increased.

Table 28: ***Graduates' satisfaction rate with 92 samples***

Criterion	**Evaluation (%)**				
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. The training program specifies the expected learning outcomes (the training objective).	1.09	5.43	72.83	16.30	4.35
2. The training program encourages students to study.	0.00	5.49	50.55	41.76	2.20
3. The training program reflects clearly the demands of students and society	0.00	18.48	50.00	27.17	4.35
4. The training program has a good balance between fundamental knowledge and specialized knowledge.	1.10	13.19	51.65	27.47	6.59
5. The program specification helps students and society understand the training program	0.00	13.04	53.26	29.35	4.35
6. There is a harmonious combination among courses in the training program	0.00	11.96	52.17	30.43	5.43
7. Lecturers introduce to students the teaching methods of each course	2.17	7.61	47.83	41.30	1.09
8. The teaching methods help students understand theory and apply it into practice easily	2.27	9.09	47.73	34.09	6.82
9. The appropriate teaching method helps students develop personal skills	1.10	6.59	59.34	30.77	2.20

10. The scope of student assessment (input, process and output).	0.00	10.87	59.78	25.00	4.35
11. Lecturers use various forms to assess students.	1.09	10.87	50.00	31.52	6.52
12. You are clearly known about assessment criteria	2.17	9.78	47.83	30.43	9.78
13. The University assesses all aspects of the training program comprehensively.	0.00	8.70	51.09	31.52	8.70
14. The University has a clear enrollment policy	0.00	8.70	39.13	36.96	15.22
15. The University adjusts credit – based system appropriately	0.00	9.78	38.04	43.48	8.70
16. The learning schedule matches the study load.	0.00	6.59	62.64	25.27	5.49
17. The learning process of students is fully recorded in the student profile	1.09	5.43	47.83	34.78	10.87
18. Effectiveness of consulting and supporting students	0.00	6.52	45.65	41.30	6.52
19. Lecture halls for theory classes are appropriate	0.00	9.78	48.91	31.52	9.78
20. Effectiveness of using lab equipment.	0.00	14.13	43.48	35.87	6.52
21. Effectiveness of using learning materials.	2.17	4.35	43.48	34.78	15.22
22. The University evaluates the training program periodically.	0.00	8.70	54.35	28.26	8.70
23. The University adjusts the effectiveness of training program periodically	1.09	6.52	55.43	31.52	5.43
24. You are satisfied with "Course evaluation".	1.09	10.87	51.09	32.61	4.35
25. Your comments are considered to improve courses.	2.17	6.52	50.00	35.87	5.43
26. Student representatives are involved in designing the training program (indirect).	1.09	14.13	51.09	29.35	4.35
27. Level that you gain the expected learning outcomes (the training objective).	0.00	8.70	57.61	29.35	4.35
28. Level of training program meets the career requirements.	0.00	13.04	59.78	23.91	3.26
29. Your overall comment of learned programs	1.12	4.49	55.06	35.96	3.37
30. You gain your job after graduation: 1 - Yes; 2 - No	55.29	44.71	0.00	0.00	0.00
31. You have job in your field of study: 1 - Yes; 2 – No	50.00	50.00	0.00	0.00	0.00
32. You have the needs to study at higher level: 1 - Yes; 2 - No	73.03	26.97	0.00	0.00	0.00

15.3. Labor market and alumni's Satisfaction for programme

Like criterion 14, at section 14.3, employability of graduates is satisfactory that shows labor market and alumni's Satisfaction ***(Exh.13.02, Exh.14.03).*** Because via employability of graduates is satisfactory expresses high quality training activities for study program. The qualitative data from the workshop, seminar and conferences attended by work market and alumni and conversations between the staff and employers shows that employers and alumni are quite satisfied with the program. Several companies have come to the college, interviewed and recruited students ***(Exh.15.01).*** Alumni and labor market feedback system needs to be improved better and better in the future.

The qualitative data from the workshop, seminar and conferences attended by work market and alumni and conversations between the staff and employers shows that employers and alumni are quite satisfied with the program. Several companies have come to the college, interviewed and recruited students.

The department has constructed a system to collect feedback from the labor market. The survey result from 07 companies through the questionnaire including 32 items to evaluate the satisfaction about the program and some other related issues (as in the questionnaire). The questionnaire is designed to show 05 levels of satisfaction. Level 1 means "very unsatisfied"; level 2 means "unsatisfied"; level 3 means "satisfied"; level 4 means "very satisfied" and level 5 means "excellent". Data analysis results show that 88% of the labor market chooses level 3 to level 5 for all items (Exh.15.01).

Table 29: Labor market's satisfaction rate for programme with 120 samples

Criterion	Evaluation (%)				
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**
1. Ability to apply general knowledge in work.	0,00	4,60	56,32	36,78	2,30
2. Ability to work independently.	0,00	1,14	44,32	46,59	7,95
3. Ability to work in teams.	0,00	7,95	43,18	39,77	9,09
4. Ability to plan schedule for specialized activities.	1,15	4,60	49,43	35,63	9,20
5. Ability to communicate (negotiate).	0,00	10,34	40,23	43,68	5,75
6. Sensitive to work environment changes.	0,00	7,95	53,41	31,82	6,82
7. Fundamental knowledge and major knowledge are balanced.	0,00	6,90	63,22	28,74	1,15
8. Capacity of computer knowledge.	0,00	10,23	42,05	42,05	5,68
9. Capacity of foreign languages.	0,00	38,64	42,05	17,05	2,27
10. Capacity of doing research (improvement – initiative).	3,41	17,05	54,55	22,73	2,27
11. Ability to study at higher level.	0,00	11,49	54,02	32,18	2,30
12. Employee's conduct.	0,00	-	24,14	49,43	26,44
13. Responsibilities in professional field.	0,00	1,14	28,41	53,41	17,05
14. Progressive spirit in professional field.	0,00	0,00	29,07	60,47	10,47
15. Working style.	0,00	0,00	42,05	37,50	20,45
16. Responsibilities for colleagues.	0,00	1,14	39,77	43,18	15,91
17. Compliance with policies and laws of the State.	2,30	0,00	20,69	37,93	39,08
18. Number of CTU graduates working at your organization: 1) 1 – 20 2) 21 – 40 3) 41 – 60 4) 61 – 80 5) more than 80	79,76	5,95	8,33	3,57	2,38
19. Employees are oriented in career.	2,35	14,12	62,35	20,00	1,18
20. The quality of training program meets the requirements of your organization.	0,00	17,24	57,47	20,69	4,60
21. Employees have deep and wide knowledge.	0,00	24,42	59,30	15,12	1,16
22. Employees have a thorough understanding of theory.	0,00	11,36	55,68	29,55	3,41
23. Employees are good at practice.	1,15	21,84	55,17	21,84	-
24. Employees have good working solving skills.	0,00	5,75	56,32	35,63	2,30
25. Employees build prestige for CTU students.	0,00	4,65	55,81	36,05	3,49
26. You are satisfied when CTU students do internship at your organization.	1,23	4,94	62,96	27,16	3,70
27. You are satisfied when invited to design the training program.	0,00	5,75	52,87	32,18	9,20
28. You are satisfied when participating in vocational guidance for students.	0,00	6,98	56,98	29,07	6,98
29. You become experts in the training fields.	0,00	13,41	69,51	13,41	3,66
30. You are members of Employers' Union.	4,94	9,88	56,79	25,93	2,47
31. CTU links with your organization.	2,38	10,71	51,19	30,95	4,76
32. Your overall comment of all above contents.	1,15	4,60	49,43	40,23	4,60
Average	3.1	9.2	48	32	7.7

The department has also collected feedback from the alumni of Electrical Engineering Program through the questionnaire including 60 items to evaluate the satisfaction about the program and some other related issues (as shown in the questionnaire). The questionnaire is designed to show 05 levels of satisfaction. Level 1 means “very unsatisfied”; level 2 means “unsatisfied”; level 3 means “satisfied”; level 4 means “very satisfied” and level 5 means “excellent”. Data analysis results show that 83% of the alumni choose level 3 to level 5 for all items *(Exh. 15.02).*

Table 30: ***Alumni’s Satisfaction rate with 250 samples***

Criterion	Evaluation (%)				
	Level 1	Level 2	Level 3	Level 4	Level 5
1. Ability to apply knowledge in work.	-	10,37	60,98	26,83	1,83
2. Ability to manage work.	0,61	9,15	53,66	31,71	4,88
3. Ability to communicate (negotiate).	1,23	16,56	49,08	28,83	4,29
4. Sensitive to work environment changes.	0,00	7,93	50,00	36,59	5,49
5. Fundamental knowledge and major knowledge are balanced.	0,00	19,14	51,23	26,54	3,09
6. Ability to do research (having improvement initiatives).	0,61	20,12	48,17	26,22	4,88
7. Ability to study at higher level.	0,61	10,43	49,08	36,20	3,68
8. Responsibilities in professional knowledge.	0,00	1,85	43,83	46,30	8,02
9. Progressive spirit in professional knowledge.	0,00	1,83	39,02	50,61	8,54
10. Working style.	0,00	1,23	36,20	50,31	12,27
11. Responsibilities for colleagues.	0,00	1,84	26,38	53,37	18,40
12. Compliance with policies and laws of the State.	1,23	5,56	36,42	35,19	21,60
13. You are oriented in career.	0,61	8,59	55,21	31,29	4,29
14. You build the prestige for CTU students.	0,00	14,20	40,12	37,04	8,64
15. The quality of training program meets the requirements of your organization.	0,00	17,07	50,61	29,27	3,05
16. You are satisfied with the teaching organization of the training program.	0,00	18,01	54,04	24,84	3,11
17. You are satisfied with the teaching methods.	0,00	23,31	54,60	20,25	1,84
18. The teaching methods are easy to understand and encourage students to become active.	1,22	29,27	46,34	18,90	4,27
19. Lecturers link theory to practice.	0,00	25,77	47,85	23,93	2,45
20. The form to assess students is appropriate.	0,00	11,73	56,79	27,16	4,32
21. You are satisfied with the credit-based system.	0,00	11,59	42,68	35,98	9,76
22. You are satisfied with student consulting and supporting system.	0,00	19,63	49,69	22,70	7,98
23. You are satisfied with learning materials, learning and teaching aids/laboratories.	0,00	14,11	48,47	31,29	6,13
24. You are satisfied when participating in designing the training program.	0,00	8,64	46,91	37,65	6,79
25. You are satisfied when participating in vocational guidance for students.	0,61	5,52	51,53	38,65	3,68
26. You are satisfied when participating in broadcasting for Can Tho University.	0,00	3,09	50,00	42,59	4,32
27. You are satisfied with your current relationship to CTU.	6,88	8,75	50,63	28,75	5,00
28. Your overall comment of all above contents.	3,82	7,01	54,78	29,94	4,46

29. You gain your job after graduation: 1) 6 months 2) 12 months 3) 24 months 4) 36 months 5) still unemployed	76,73	11,95	5,66	4,40	1,26
30. The reason that helps you gain your jobs is: 1) Capacity 2) Experience 3) CTU prestige 4) Adaptability 5) Other(s)	24,68	9,74	12,34	35,71	25,32
31. You are working at: 1) a government agency 2) a private company 3) a foreign company 4) a joint venture company 5) Other(s)	57,59	21,52	8,86	5,06	6,96
32. You are working in your field of study: 1) Right 2) Close 3) Re-educated 4) Advanced 5) Other(s)	55,00	30,00	5,63	3,75	5,63
33. Problem solving ability	0.0	8.2	57.1	28.6	6.1
34. Professional skills.	2.0	20.4	40.8	36.7	0.0
35. Management skills.	0.0	8.2	57.1	28.6	6.1
36. Designing skills.	0.0	14.6	62.5	22.9	0.0
37. Manufacturing skills.	2.1	37.5	45.8	12.5	2.1
38. Programming skills.	4.1	36.7	46.9	12.2	0.0
39. Installing and operating skills.	0.0	12.2	51.0	26.5	10.2
40. Maintaining and fixing skills.	0.0	16.3	42.9	34.7	6.1
41. Testing skills.	0.0	20.4	57.1	18.4	4.1
42. Using application software skills.	0.0	6.1	75.5	16.3	2.0
43. Needs for short-term training.	0.0	12.2	49.0	34.7	4.1
44. Needs for major seminars.	0.0	12.8	42.6	40.4	4.3
45. Needs for studying in Master and PhD. degrees.	0.0	8.7	63.0	19.6	8.7
46. Needs for participating in introducing new technologies.	0.0	6.4	34.0	51.1	8.5
47. Needs for fostering knowledge of PLC and frequency converter.	2.1	10.6	42.6	31.9	12.8
48. Needs for fostering knowledge about industrial operating and maintaining.	2.1	4.3	53.2	34.0	6.4
49. Needs for fostering knowledge about industrial electricity.	2.1	8.3	43.8	37.5	8.3
50. Needs for fostering knowledge about electrical turbo.	4.3	19.1	44.7	27.7	4.3
51. Needs for fostering knowledge about electric system.	0.0	2.1	44.7	44.7	8.5
52. Needs for fostering knowledge about refrigeration electrical engineering.	2.2	23.9	37.0	32.6	4.3
53. Needs for fostering knowledge about power supply.	0.0	13.0	50.0	30.4	6.5
54. Needs for studying practicing certificates about electricity.	2.2	10.9	50.0	32.6	4.3
55. Satisfied about teaching methods.	2.1	10.6	53.2	29.8	4.3
56. Satisfied about teaching staff ability.	2.1	0.0	52.1	37.5	8.3
57. Satisfied about the practice content.	0.0	10.6	51.1	34.0	4.3
58. Satisfied about the practice assistant staff.	0.0	8.5	55.3	31.9	4.3
59. Satisfied about facilities and equipment.	0.0	8.3	37.5	45.8	8.3
60. Satisfied about being a student of Electrical Engineering Program of Can Tho University.	0.0	2.1	33.3	39.6	25.0
Average	4.3	12.6	45.8	30.8	6.5

a) Strengths:

- The quantitative results of data analyses show positive feedback from students and graduates that they are satisfied with the quality of program they get.

b) Weaknesses:

- The feedback of work market and alumni has not been collected on large scale and systematically.

c) Action:

- The university has constructed a system of data collecting feedback of labor market and alumni. The data collection will be performed annually on large scale.

III. STRENGTHS AND WEAKNESSES ANALYSIS

1. Strengths

1.1. Expected Learning Outcomes

§ One main point of strengths of ELOs is the curriculum always strengthens the learners in their self-study and promotes their awareness in life-long learning via results of input and both in learning process and output, because almost contents reach to KPIs of ELOs and thank to useful credit system, staff quality, teaching and learning strategy, student quality and support services.

§ Lectures and students are informed and clearly know ELOs to build private/right directions and to have good ways for teaching and learning. Student will understand and can use well what they learn.

1.2. Program Specification

§ The programme specification, clearly explains the ELOs, helps students achieve knowledge and necessary skills, how to learn, helps lectures know adequate teaching methods, and labor market or students' parents clearly know/evaluate quality of program via website or meetings to choose subject their children.

1.3. Program structure and content

§ The program provides sufficient specialized knowledge and basic skills learners. The generic and basic knowledge is sufficient in order that students can study higher thank to basic on Credit system. The students learn basic knowledge such as maths, physics, electric circuits, technical drawing to easy study professional courses and can study different methodologies that are related. The program trains them professional skills to satisfy needs of socio-economic development in Mekong Delta area.

§ EEP structure and content is referred program framework from HCM City and foreign country.

1.4. Teaching and Learning Strategy

§ At CTU the teaching and learning strategy is designed and implemented. Its contents is complied/combined different points from educational law, statutes, regulation and fulfil mission and vision. The teaching and learning strategy is one of good tools to help lecturers and students to achieve ELOs directly.

§ Teaching adequate methods are flexibly varied on each course and ability of students. They help students to learn by "action learning", with stimulation and facility learning, acquirement, and use knowledge.

§ Different courses are designed differently to each other to ensure their special features and characteristics. As the result, teaching and learning methods are considered and chosen carefully. With the student-oriented teaching methods, students are more convenient to achieve the knowledge, and understand the lessons well. Moreover, in recent years, the university and college have invested and equipped more utilities, which facilitate both teaching staff and students in teaching, learning and doing researchs.

1.5. Student Assessment

§ According to Statute No 43/2007/MOET about Credit system and use different regulations with multiple clear criteria/standards, the student assessment focuses on input, process and output with appropriate assessment methods. The assessment is widely informed with student assessment methods, planning for the tests in the first class of the course, and at least one week prior for tests.

§ On the first class of each course, students are informed about teaching and learning methods, assessment methods, marking structure of the course and assessment criteria. This way helps students be aware and independent in their studying from the beginning of the courses. Students might set suitable studying plans and methods for the courses so that they could get the best result; as the result, they are more responsible for their studying results. For

the examination, teaching staff will inform students at least a week before the test about the time, location so that students could have the best preparation.

1.6. Academic Staff Quality

§ Most of staff in Department of Electrical Engineering are young, active and enthusiastic in work. Most of them have age from 26 to 33 so they study and apply new technology, new teaching methods quickly and easily. They are well trained inside or outside.

1.7. Support Staff Quality

§ Most support staff are very enthusiastic, dynamic in their work. They clearly understand their task for each position, as for an example, the office staff are responsible in helping the Board of Dean to plan the general working schedule for entire college, to guide procedures for students (learning schedule design, scholarships, and so on). Thanks to their supports, the Board of Dean, lecturers and students can concentrate on their work and work effectively.

1.8. Student Quality

§ The quality of new intake students is increasing. At Can Tho University, recruitment of new students is done closely and strictly according to Vietnam MOET's Regulations to meet the criteria in training excellent graduates for society needs in the new era. To be a student at Can Tho University in general and the College of Engineering Technology in particular, candidates have to pass a competitive national examination organized in July annually (Can Tho University only recruits about 10% of among 100,000 candidate documents applied in the university every year.

1.9. Student Advice and Support

§ Students are delivered academic advice, material, mentoring and financial support. Can Tho University and College of Engineering Technology have many policies to support students. Beside of getting academic advice through the academic advisor force, CTU and EEP students are also provided with many other supports from material (classrooms, labs, electronic library, housing…), moral (great competition in music, sports, etc) to internal financial support: tuition remission for poor students, encouraging scholarships fund for students having excellent learning achievements and externally supported organizations and companies

§ During the studying time in the university, students get a lot of supports about studying consultancy, finance, facilities and equipment. In every major class, there is always one academic supervisor to manage, help, and give advice for students both about academic life and social life. This person knows the ability (weaknesses and strengths) as well as personal situation of their students very well. Students also feel comfortable and secure with the existence of the academic supervisor. During the student-time, the university and college also organized activities that help students more mature and strengthen their social skills.

§ Each student was offered the email address. In many years, the university has equipped some public computer labs. Students are offered the user account and some quota which is free of charge to use the computers in these labs. Students are getting familiar with applying the aids of IT in their learning. In practical courses of the major or when students do the final thesis, they are partly financed by the university.

1.10. Facilities and Infrastructure

§ Facilities of the University, College and Department are enough for use and meet the needs of training, teaching and doing research. There is one big hall in Can Tho University campus where can be used for activities as: seminar learning, important festivals, musical performance, etc. The Learning Resource Center of the university provides services meeting the training need. Moreover, each school/college itself allocated and arranged the \facilities and infrastructure for operating.

1.11. Quality Assurance of Teaching and Learning Process

§ The contents of courses are adjusted and updated every year. The curriculum is reviewed and revised periodically.

- To fulfill the mission of the university that is to offer high quality human recourses for the region and nation, the university and college are paying much attention to the enhance the quality of the outcomes of the program. To do that, the university has applied the teaching evaluation system so that the lecturers can improve their teaching methods through students' comments on "Course Evaluation Form" which is done every semester of an academic year.
- The program is regularly developed and updated by teaching staff, feedback from alumni, and labor markets. As the result, graduates of the program have more practical and usable knowledge and skills that meet the requirements and needs of the society and the development speed of technology.

1.12. Staff Development Activities

- The university and the college have clear plan in recruiting and training staff. The staff recruitment process carried out basing on actual needs of each college/school through the Recruitment Regulations and Requirements on striving to improve professional capacity for academic staff. Fostering and training for staff after recruitment are one of priority activities that attracts special concerns of the university and college leaders in the period of integration and development (every year, the university sends staff to participate in short and long term courses both domestic and abroad, for the objective to 2015, all lecturers at CTU will obtain Master degree).

1.13. Stakeholders Feedback

- Can Tho University, the college has the system for getting feedbacks from stakeholders. Annually, to contribute to the activity of training program improvement, the university gives announcement to related units to collect stakeholders' opinions through questionnaires designed by the CTU Quality Assurance and Testing Center. Currently, the Department of Electrical Engineering has designed a website to get information from graduates and alumni of EE students. Getting feedback from stakeholders is also carried out through many other channels as: email, alumni meeting, conferences, seminars, etc.

1.14. Output

- Students from engineering and technology fields can get their jobs easily after graduation because of various needs from society. Many companies may send their request to Can Tho University to choose good and excellent students for the positions available at the companies.
- Through the training management system of the university, the college, department and academic counselors can record easily the learning progress of students and the pass and dropout rate as well.

1.15. Stakeholders Satisfaction

- The quantitative results of data analyses show positive feedback from students and graduates that they are satisfied with the quality of program they get. Many alumni of the electrical engineering program held many important positions in the factories: station chief, vice director of branches, plant foreman...Many of them now come back to Can Tho University as employers to recruit new graduates from the program.

2. Weaknesses

2.1. Expected Learning Outcomes

- Some students do not have an appropriate level of passion in the career, are not efficient in their self-study, self- research, and problem – solving in place, where students work.
- Activities for employability consultancy are still not adequate yet. Some of reasons are teaching methods are not still adequate for each student, shortage of soft skills, learning methods of student not well, student background, working part-time, studying second major and position of student in society.

2.2. Program Specification

§ The program specification has not periodically been edited and updated yet, because the department has not received concerns or evaluated from stakeholder about a specifically-designed form or refinement of the program specification. Although The program specification is informed via website and some different ways, maybe, number of stakeholders are interesting in one still low.

2.3. Program structure and content

§ The curriculum periodically and completely has not been evaluated by labor market, because it is difficult to collect feedback from employers/alumni with different reasons as shortage of money or QA officers for survey activities. Besides, employers' awareness of importance of feedback are not clearly, so receiving rate of samples is low. However, CTU and COET with Internal QA system yearly (from 2001 up to now) surveys opinions from stakeholder as course evaluation, graduates, Alumni, labor market about course and program (Related criteria 13 and 15).

2.4. Teaching and Learning Strategy

§ Teaching and learning strategies have not used as a systematic tool yet, because its contents before are on different documents as law, statutes, regulation, plan.

Teaching and learning strategies are affected by the large number of students/groups in some courses and in laboratories now. Lecturers themselves divide large group into 3 or 4 smaller ones. There are many reasons for this problem. One most outstanding reason is the finance. Although the university and college have invested the facilities for the labs, it is still limited. The equipment (tools, machine) is not enough for students. Moreover, because of the fast development of technology, the current equipment of the college becomes out-of-dated easily.

2.5. Student Assessment

§ The marking grades of the mid-term and final examinations are depended on lecturers, because lecturers with full power to compose questions, to examine, to give grades/marks and to evaluate students, so it is less unprejudiced/objective.

§ The mid-term and final exams are not inspected throughout. Some invigilators did not strictly handle some cases of examination regulation violations. Since the university applied the credit-based system, teaching staffs are completely responsible for organizing examination for the courses that they taught, so the role and management of the university in students' assessment is not much. In recent years, the results of the examinations are high. However, there are opinions that this is a serious problem and should be adjusted because the results might be not objective.

2.6. Academic Staff Quality

§ Lack of staffs with doctoral degree and experienced subject leading lecturers because the Department of Electrical Engineering has just established more than 10 years and the teaching staff are in the period of training (currently, 4 lectures of the department are studying abroad to get doctoral degree).

2.7. Support Staff Quality

§ Majority of support staff have not been trained to enhance their professional skills at higher level, laboratory staff are young so their experience is still limited.

2.8. Student Quality

§ The ratio of female students in the Electrical Engineering is very limited in recent years. There are many objective reasons stated: the female students have trend to study in fields that help them to find a good job easily after graduation in good working conditions. They choose to work in a room with air-conditioner rather than work outsides as male students in engineering technology fields and their family do not support for their girls to study in these fields as well.

§ The passing grades for the program are still low.

2.9. Student Advice and Support

§ In Can Tho University, the College of Technology and other units, beside of the teaching activity, each lecturer will be responsible for each class as a learning advisor to support

students when they need any help in study and their life as well. However, not almost students could be received a continuous support from their academic advisors who are overloaded with teaching and research.

- Students have not received a continuous support from their academic advisors who are overloaded with teaching and research. Because the number of students in each class is large, it is difficult for the academic supervisors to give regular consultancy and supports to all students. In addition, the class holds only 3-4 meetings in an academic year; there are not many opportunities for students to show their difficulties and ask for advice. Moreover, academic supervisors are also teaching staffs, who are also busy with teaching and doing research; there is limited attention to their class..

2.10. Facilities and Infrastructure

- Allocating the infrastructure for teaching and learning is still not adequate. Despite of being provided full of classrooms and halls for teaching and learning, the numbers of students in some course classes still exceed their own capacity.
- The teaching support devices used at large frequency have degraded and damaged so it affects to some extent the improvement of teaching methods. Bởi vì trường ĐHCT là trường đa ngành nên số lượng sinh viên rất lớn.

2.11. Quality Assurance of Teaching and Learning Process

- Course assessment is done in two semesters in every year through a questionnaire designed by QATC and results of this assessment will be send to lecturers so that they can adjust their teaching effectively. However, there are some lecturers who do not perform well.
- Students feedback for the courses are collected in every semester by the Quality Assurance and Testing Center of the university. The results from the feedback which show the satisfaction of students on the activities related to the courses are sent to the teaching staff of those courses. Basing on the results, teaching staffs have adjustment on the course in terms of teaching methods, learning materials, assessment methods… However, that step uses the result was not carried out well and some teaching staffs ignore the results. This activity costs a big amount of money every year, but the effectiveness is not appreciated.

2.12. Staff Development Activities

- The achieved results of plan have not fully met the expectation because some staff have not completed study plan schedule.
- The achieved results of plan have not fully met the expectation because of long study time. Some of academic staff don't finish their studies according to plan on time/not rate of progress.
- Percentage of staffs' qualifications does not meet as the strategy shown. Now in Dept. there are one doctor/Ph.D and 9 masters.

2.13. Stakeholders Feedback

- Feedback from labor market considered as one of important information channels has a great contribution to the development and improvement of training programs at any higher institutions around the world and Can Tho University as well. However, the number of survey questionnaires collected is not very much because most of companies locate very far from CTU. Currently, the university and the college have no private fund for this activity.
- In general, effect of feedback system is not high with some different reasons: 1) leardership for stakeholder feedback is not strong yet; 2) structure is still not coherent, 3) lack of money, 4) quality culture is not high, 5) policy for responsibility and benefits of QA officers are not satisfaction. So ***Stakeholders Feedback is not*** periodically.

2.14. Output

- In Can Tho University, the research activities of staff, lecturers and students get a great concern from the Rectorate Board. There are many research works and journals annually implemented and published on national and international magazines. However, the

research of students in engineering and technology fields is still limited because they have to spend most of time learning well for their subjects so that they can get a good job in a more and more competitive market economy. Research of students is just recently promoted and it is still limited, because lack of money.

- In the system of student progress management, database is still very different between schools/departments, so it is difficult to trace their information when needed. Because, so far many times CTU changes/replaces software of manage/monitoring system, so it is very difficult for statistic.
- Employability of some students is still considerable problems, because different reasons as scio-georgaphic position, background, skills, knowledge or attitude.
- .

2.15. Stakeholders Satisfaction

- Although at CTU and COET have labor market feedback system that belongs to IQA system and different ways as forum of Alumni Association on CTU's Website, co-operations between CTU and companies, number of collected samples is not high, because for labor markets do not consider program QA- qualitification of employees yet and IQA system doesn't have enough money for survey acitvities.
- The number of feedback responses from labor market is limited because most of companies are located very far from Can Tho city, the feedback mainly received from the alumni, the workshops, the number of responses is limited, not done on a large scale.

3. Self-assessment at Program level

1	**Expected Learning Outcomes**	1	2	3	4	5	6	7
1.1	The expected learning outcomes have been clearly formulated and translated into the program				x			
1.2	The program promotes life-long learning					x		
1.3	The expected learning outcomes cover both generic and specialised skills and knowledge					x		
1.4	The expected learning outcomes clearly reflect the requirements of the stakeholders				x			
	Overall opinion					x		
2	**Program Specification**							
2.1	The university uses program specification					x		
2.2	The program specification shows the expected learning outcomes and how these can be achieved				x			
2.3	The program specification is informative, communicated, and made available to the stakeholders					x		
	Overall opinion					x		
3	**Program Structure and Content**							
3.1	The program content shows a good balance between generic and specialised skills and knowledge					x		
3.2	The program reflects the vision and mission of the university				x			
3.3	The contribution made by each course to achieving the learning outcomes is clear					x		
3.4	The program is coherent and all subjects and courses have been integrated					x		
3.5	The program shows breadth and depth					x		
3.6	The program clearly shows the basic courses, intermediate courses, specialised courses and the final project, thesis or dissertation					x		
3.7	The program content is up-to-date				x			
	Overall opinion					x		

4	**Teaching and Learning Strategy**							
4.1	The faculty or department has a clear teaching and learning strategy					x		
4.2	The teaching and learning strategy enables students to acquire and use knowledge academically					x		
4.3	The teaching and learning strategy is student oriented and stimulates quality learning					x		
4.4	The teaching and learning strategy stimulates action learning and facilitates learning to learn				x			
	Overall opinion					x		
5	**Student Assessment**							
5.1	Student assessment covers student entrance, student progress and exit tests						x	
5.2	The assessment is criterion-referenced					x		
5.3	Student assessment uses a variety of methods					x		
5.4	Student assessment reflects the expected learning outcomes and the content of the program					x		
5.5	The criteria for assessment are explicit and well-known					x		
5.6	The assessment methods cover the objectives of the curriculum					x		
5.7	The standards applied in the assessment are explicit and consistent					x		
	Overall opinion					x		
6	**Academic Staff Quality**							
6.1	The staff are competent for their tasks					x		
6.2	The staff are sufficient to deliver the curriculum adequately					x		
6.3	Recruitment and promotion are based on academic merits					x		
6.4	The roles and relationship of staff members are well defined and understood					x		
6.5	Duties allocated are appropriate to qualifications, experience and skills					x		
6.6	Staff workload and incentive systems are designed to support the quality of teaching and learning				x			
6.7	Accountability of the staff members is well regulated					x		
6.8	There are provisions for review, consultation and redeployment					x		
6.9	Termination and retirement are planned and well implemented					x		
6.10	There is an efficient appraisal system				x			
	Overall opinion					x		
7	**Support Staff Quality**							
7.1	The library staff are competent and adequate in providing a satisfactory level of service					x		
7.2	The laboratory staff are competent and adequate in providing a satisfactory level of service					x		
7.3	The computer facility staff are competent and adequate in providing a satisfactory level of service					x		
7.4	The student services staff are competent and adequate in providing a satisfactory level of service					x		
	Overall opinion					x		
8	**Student Quality**							
8.1	There is a clear student intake policy					x		

8.2	The student admission process is adequate					x		
8.3	The actual study load is in line with the prescribed load					x		
	Overall opinion					x		
9	**Student Advice and Support**							
9.1	There is an adequate student progress monitoring system					x		
9.2	Students get adequate academic advice, support and feedback on their performance				x			
9.3	Mentoring for students is adequate					x		
9.4	The physical, social and psychological environment for the student is satisfactory				x			
	Overall opinion				x			
10	**Facilities and Infrastructure**							
10.1	The lecture facilities (lecture halls, small course rooms) are adequate					x		
10.2	The library is adequate and up-to-date					x		
10.3	The laboratories are adequate and up-to-date				x			
10.4	The computer facilities are adequate and up-to-date					x		
10.5	Environmental health and safety standards meet requirements in all aspects					x		
	Overall opinion					x		
11	**Quality Assurance of Teaching and Learning Process**							
11.1	The curriculum is developed by all teaching staff members				x			
11.2	The curriculum development involves students				x			
11.3	The curriculum development involves the labour market				x			
11.4	The curriculum is regularly evaluated at reasonable time periods					x		
11.5	Courses and curriculum are subject to structured student evaluation					x		
11.6	Feedback from various stakeholders is used for improvement				x			
11.7	The teaching and learning process, assessment schemes, the assessment methods and the assessment itself are always subject to quality assurance and continuous improvement				x			
	Overall opinion				x			
12	**Staff Development Activities**							
12.1	There is a clear plan on the needs for training and development of both academic and support staff					x		
12.2	The training and development activities for both academic and support staff are adequate to the identified needs					x		
	Overall opinion					x		
13	**Stakeholders Feedback**							
13.1	There is adequate structured feedback from the labour market			x				
13.2	There is adequate structured feedback from the students and alumni						x	
13.3	There is adequate structured feedback from the staff					x		
	Overall opinion					x		
14	**Output**							
14.1	The pass rate is satisfactory and dropout rate is of acceptable level				x			
14.2	Average time to graduate is satisfactory				x			
14.3	Employability of graduates is satisfactory					x		
14.4	The level of research activities by academic staff and students				x			

	is satisfactory							
	Overall opinion				x			
15	**Stakeholders Satisfaction**							
15.1	The feedback from stakeholders is satisfactory					x		
	Overall opinion					x		
Overall verdict						**x**		

4. Plans

4.1. Expected Learning Outcomes

§ In 2012 and later, the college will research for methodology innovation and teaching contents in order to motivate students' passion in career, self-study and self-research. To achieve these things, college is responsibility and strongly adjusts some of reasons leading to weakness above. Scientific and Training Committee of CTU and College of Engineering Technology make decision "on necessary time" to adjust ELOs, basing on the feedback from labor market, teaching and support staff, students and training objectives of CTU in the next years.

4.2. Program Specification

§ In 2012 & 2013, the university and college will make a specific plan to edit and update the program specification periodically. CTU and COET will have survey plan for the concern of stakeholders to have good feedbacks for improvement, because contents of program specification are general-necessary information that help stakeholders to know program clearly.

4.3. Program structure and content

§ In 2012 (and later) while COET is implements the self-assessment of Electronic and Engineering program, COET continue to survey well alumni's and labor market's feedback with results on table 12 and table 13. CTU and COET effectively will reform structure of feedback system for student, graduate, alumni and labor market to improve program structure and content (related criteria 13 and 15). CTU and COET will provide more adequate budget and more QA staff to survey.

4.4. Teaching and Learning Strategy

§ From 2013 to 2017, teaching and learning strategies will apply more completely. CTU and COET will strongly communicate by different ways: via website, meetings, workshops.

§ In 2012 & 2013, the college will adjust the number of students in each course class about 25 students for theory. First step, for practice class lecturers themselves divide large group into 3 or 4 smaller ones.

4.5. Student Assessment

§ In 2012, CTU and the college will adjust organization of mid-term and final exams. They are inspected throughout. Some invigilators' role and responsibilities are increased to strictly handle cases of examination regulation violations for some students.

§ In 2012 and later, marking grades of the mid-term and final examinations will be controlled adequately by testing officers and inspectors. The lecturers with limited power to compose questions, to examine, to give grades/marks and to evaluate students, so it is unprejudiced/objective examination better. Results are not depended on lecturers.

4.6. Academic Staff Quality

§ The Department of Electrical Engineering is responsible for planning the road to increase the numbers of lecturers holding doctoral degree to meet the needs of training in the period of 2012 to 2020 and sends it to the College of Technology:

- In 2012 and 2017 the department will have 8 lecturers who have Ph.D degree.

- In 2017 and 2020 there will be more 8 lecturers who hold doctoral degree.

4.7. Support Staff Quality

§ The department and college will have plans to recruit more new staff to meet the need of laboratories: In 2012-2017, the Department will submit the plan to the Board of Dean for recruiting more 02 new staff to serve in laboratories and for sending them to train and improve their skills (every year, Can Tho University always has short-term courses for staff in many fields to enhance their skills and knowledge, basing on this, the department and college will consider and nominate related staff to participate in these courses).

4.8. Student Quality

§ In 2012 and later, the university and college as well will have strategies to attract good students from high schools; pass grades are more high into EEP.

§ In 2012 and later, the university and college will enhance the support for students in learning and teaching major courses. Now, in DoEE many staff study master dergree and Ph.D degree. CTU invests DoEE modern facilities/instruments for teaching and learning.

§ Should provide adequate policy to increase the ratio of female students far from city/countryside into the Electrical Engineering, because this rate is very limited in recent years.

4.9. Student Advice and Support

§ In 2012 and later, the university and the college will reduce workload for lecturers so that they can give the continuous supports for their students when needed. In Can Tho University, the College of Technology and other units, beside of the teaching activity, each lecturer will be responsible for each class as a learning advisor to support students when they need any help in study and their life as well. However, not almost students could be received a continuous support from their academic advisors who are overloaded with teaching and research.

§ In 2012 and later number of students in class will reduced for supports of advisors better.

4.10. Facilities and Infrastructure

§ Invest and upgrade periodically modern support devices to meet the need for improvement of teaching methods.

§ Invest gradually modern equipment for large laboratories to focus on postgraduate training and doing research (plan from 2012 to 2020).

§ The college will propose the university to buy more equipment for the labs.

4.11. Quality Assurance of Teaching and Learning Process

§ In 2012 and later, the university and college will have policies to attract the involvement of the labor market in giving their feedbacks for curriculum improvement.

§ In 2012-2015, the college will propose to the Rectorial Board to publicize the results of course assessment of students to promote the enhancement and improvement the teaching strategies of lecturer.

§ In addition, these should be a policy of the university to publicize the results of the survey for feedbacks of stakeholders, especially with regards to students' survey, in order that teaching staffs can be responsible to make improvement for the courses to ensure the quality of teaching and learning.

4.12. Staff Development Activities

§ In 2012 to 2017, the college will adjust the plan to develop resources according to the actual situation. It is very necessary to reduce rate of students over one lecturer is too high that is over 24: 500 students/21 staff.

§ In 2012-2017: the college will set a plan to increase the percentage of staff's qualifications, because almost staff are still young, at age of 25 t0 33.

4.13. Stakeholders Feedback

- In 2012 and later, leader of CTU and COET must change own view to opening approaches for QA activities and identify: ***Educational Quality is alive for an University***. Supports for QA will be increasing: money, people and policy.
- In 2012 and later, the department will design a forum to receive more feedbacks from stakeholders. Now DoEE designed feedback system via website from labor market, alumni, graduates, DoEE will keep and open relationship with companies via meetings, workshops.

  From changes in view and increasing supports, next time this feedback system will be better.

4.14. Output

- In 2012 and later, the university and college will build up and update the database system to collect information when needed easier. Opportunely, for 4 last years there is CTU regulation about every 3 months Department of General Affair receives report under the same form from different units (facultie/colleges/departments), step by step for improvement we have offical useful database.
- In 2012 & 2013, the college will propose solutions to encourage students to do their researches and increase funding to support student research activities, elected officials and scientific advice, open playing field competitions encourage students to research topics highly practical, technological solutions for business.
- CTU and COET will provide good ways that student understand researches to study. Researchers- leturers try to deliver researching directions/subjects/technical solutions to companies with high actual practice students. Specially, CTU and COET provide the best conditions and money.

4.15. Stakeholders Satisfaction

- In 2012 CTU and COET have reformed a labor market feedback system for collecting opinions form labor market and alumni (Related tables 12, 13, 14 15, 16, 17, 18 and & 19). The data collection will be performed annually via traditional ways and online in the next years. CTU and COET will provide more money, officers, the best conditions for these activities. Clearly one of 4 main points of ELOs is ELOs reflect the requirements of the stakeholders. If this point is too weak, results of educational activities do not reach to targets/objectives. Existing infrastructure of information technology has completed construction allows subjects the electronic survey to be conducted to collect feedback fast, accurate large scale.

* SWOT analysis

	Strengths (Internal)	**Weaknesses (Internal)**
Opportunities (External)	Strengths / Opportunities: 1. Having good communication to stakeholder, especially labor markets. The program will get more useful feedback to upgrade the program, and rate of graduate employability with satisfactory is higher 2. Staff are being trained well from many country. So Electrical Department will get variety of experiences in education, and will have innovative application products. 3. A good education system is being built by AUN criteria. The graduate will satisfy to labor markets in ASEAN area.	Weaknesses / Opportunities**:** 1. There are many staff having not been trained for PhD. However, they will be trained for PhD abroad according to training plan period 2008 - 2012 thanks to international relationship of CTU. 2. The system of evaluation of educational quality and outcome has not been sufficient. Therefore, it is the opportunity to improve the curriculum, updating models in domestic as well as overseas.

Threats (External)	Strengths / Threats: 1. There are many students studying at Cantho University. The EE is the first program with the most experience in Mekong Delta; therefore, the subjective is inevitable. In addition, the EE Department may not realize rivals in education field. 2. The EE program has the initial charisma about human resource. Moreover, Mekong Delta needs a large number of Electrical Engineers. As a result, there is going to have training pressure affecting training quality.	Weaknesses / Threats**:** 1. There are many staff who are being studying postgraduate, a circumstance in which burdens of training pressure may affect education quality in a short period. 2. The EE program has not appealed to high-qualified students in university entrance examination yet. The result of this is that there will have difficulties in training and developing job passion for students, affecting training quality. 3. The scientific research activities of staff as well as students are limited. The EE Department has not had creative products in the research field, a situation that fades education and training reputation.

IV. APPENDICES

1. List of Tables and Figures

37.	Figure 7: The roles and relationship of staff members	Criterion 6
38.	Figure 8: Flowchat for structured feedback from the labour market and alumni	Criterion 13
39.	Table 9: Process and quality of composing of questionnaires	Criterion 13
40.	Figure 10: Satisfaction about Course evaluation at Depart. level	Criterion 15
41.	Figure 11: Satisfaction about Course evaluation, 2011-2012	Criterion 15
42.	Figure 12: Satisfaction about Course evaluation, 2011-2012	Criterion 15

2. List of Evidence

Item	Name of evidence	Code	Remark
1.	Objectives and expected learning outcomes	Exh.01.01	25/11/10
2.	http://www.ctu.edu.vn/colleges/tech/bomon/dien/web/index.php?option=com_content&view=category&layout=blog&id=1&Itemid=2	Exh.01.02	
3.	Curriculum: Electrical Engineering Programs, course 36	Exh.01.03	29/12/09
4.	Catalog of curriculum for college and university levels – Volume I	Exh.01.04	01/2011
5.	Program specification of Electrical Engineering Program	Exh.01.05	2011
6.	Syllabus: Electrical Technique – Practice	Exh.01.06	27/09/2007
7.	Questionnaires: Needs for Electrical Engineers	Exh.01.07	11/2009
8.	Questionnaires for alumni members	Exh.01.08	20/11/09
9.	Questionnaires for current students	Exh.01.09	20/11/09
10.	Curriculum: Automation and Mechanics Programs	Exh.01.10	29/12/09
11.	Syllabus: Electrical Power System design	Exh.01.11	27/9/2007
12.	Syllabus: Electrical Power System and Technique – Project Work	Exh.01.12	27/11/07 27/10/07
13.	Syllabus: Electrical Circuits	Exh.01.13	20/11/07
14.	Syllabus: Electrical Circuits – Practice	Exh.01.14	20/11/07
15.	Syllabus: Electrical Skills – Practice	Exh.01.15	28/09/07
16.	Approval of teach in the lifelong learning	Exh.01.16	2012
17.	Approval of the program specification of Electrical Engineering Program	Exh.02.01	2011
18.	Means of communication for the program specification.	Exh.02.02	
19.	Course: Power Generation Operation & Control Course: Power plant Course: Automatic Control Course: PLC (Programmable Logic Controller) Course: Power Supply Course: Lighting Technology	Exh.02.03	26/09/07 20/11/07 28/09/07 27/10/07 27/09/07 27/09/07
20.	Courses: Basic Computing, Basic English/French 1, 2, 3, Practical Vietnamese.	Exh.02.04	2007
21.	Course: Methods of Research & Writing the Scientific Reports	Exh.02.05	09/2007
22.	Course: Electrical Engineering Seminar	Exh.02.06	27/10/07
23.	Catalog of curriculum for college and university levels – Volume II and III	Exh.02.07	01/2011
24.	Academic Regulations	Exh.02.08	09/2010
25.	Course: Excursion on Electrical Engineering	Exh.02.09	24/09/07
26.	Curriculum of Electrical Engineering Program in	Exh.03.01	2000

	Technology University of Ho Chi Minh city		
27.	Curriculum map of Electrical Engineering Program	Exh.03.02	2011
28.	Websrv.ctu.edu.vn/intro (mission – vision of Can Tho University)	Exh.03.03	2008
29.	Curriculum of postgraduate Electrical Engineering Program in Technology University of Ho Chi Minh city	Exh.03.04	2000
30.	Document in department meeting of syllabi in electrical programme	Exh.03.05	2011
31.	Regulation on Academic Affairs of CTU for regular university and college students.	Exh.03.06	08/2011
32.	- Teaching & learning strategy - The teaching and learning strategy, Curriculum Diagram	Exh.04.01	2010
33.	The training plan for department staffs in the period of 2008-2015.	Exh.04.02	2007
34.	Handbook for lecturer	Exh.04.03	06/2010
35.	Full Course Studying Plan of students.	Exh.04.04	2011
36.	Course specifications of Power System 1, Power System 2.	Exh.04.05	24/09/07
37.	Semester teaching notice.	Exh.04.06	06/10/08
38.	Teaching assignment of specialized subjects.	Exh.04.07	15/12/11
39.	Graduation Thesis Implementation Plan.	Exh.04.08	15/08/11
40.	Regulation on the number of student in practice	Exh.04.09	2011
41.	Schedule for student in practice	Exh.04.10	2009-2010
42.	Announces of Seminar report.	Exh.04.11	11/2011
43.	Alumni Meeting Invitation Letter.	Exh.04.12	01/04/10
44.	Course Specification of specialized practice courses.	Exh.04.13	24/09/07
45.	The National University Entrance Exam results	Exh.05.01	09/08/07 09/08/08 11/08/10 08/08/11
46.	Notification of procedure in entrance	Exh.05.02	2012
47.	Notification of entrance examination	Exh.05.03	2012
48.	Document No.1325/ ĐHCT-ĐT on student evaluation regulation.	Exh.05.04	17/09/08
49.	Notification of TOEIC test	Exh.05.05	05/2012
50.	The results of TOEIC test	Exh.05.06	21/11/11
51.	Document 1806/ĐHCT-ĐT, course management, course organization and evaluation.	Exh.05.07	19/11/09
52.	Document No. 278/ĐHCT-ĐT on courses evaluation regulations.	Exh.05.08	08/2011
53.	Notification of learning results	Exh.05.09	2012
54.	Article 29 Studies Regulation.	Exh.05.10	08/2011
55.	Article 33 Studies Regulation.	Exh.05.11	08/2011
56.	Decision No. 1636/QD-DHCT, 16/10/2009 on promulgating recruitment regulations and requirements on striving process to improve the qualifications for CTU academic staffs.	Exh.06.01	16/10/09
57.	Decision No. 627/QD-DHCT, 07/05/2010 on recruitment regulations adjustment and requirements on striving process to improve the qualifications for CTU academic staffs.	Exh.06.02	07/05/10
58.	Plan for training and retraining staffs annually.	Exh.06.03	2010

			2011 2012
59.	Regulations on probation regime for staffs of Engineering Technology College.	Exh.06.04	09/2012
60.	Set of qualification copies of lecturers.	Exh.06.05	2012
61.	Minutes of the meeting in evaluating the department officials annually.	Exh.06.06	27/08/2011
62.	Course Evaluation Form	Exh.06.07	2011
63.	Plan of work and emulation registration	Exh.06.08	02/2010 02/2011 02/2012
64.	Minutes of the meeting in evaluating and considering the emulation for the officials.	Exh.06.09	2012
65.	Regulation on internal spending of Can Tho University.	Exh.06.10	2010
66.	Professional workload balance-sheet of the unit	Exh.06.11	2012
67.	Document No. 2934/QD-DHCT, 26/11/2010 on promulgating regulations on management of professional work for CTU academic staffs.	Exh.06.12	26/11/10
68.	Decision No. 1294/QD-DHCT, 27/08/2010 on promulgating regulations on educational affairs for the university and college students of the regular system applied from semester I of the 2010-2011 academic year.	Exh.06.13	27/08/10
69.	Document No. 1853/QD-DHCT, 03/12/2010 on guiding the implementation of regulations on teaching assistant in the university.	Exh.06.14	03/12/10
70.	Mission of learning advisors.	Exh.06.15	04/12/11
71.	Teaching diary	Exh.06.16	09/2010
72.	Document for asking permission of company and factory for site visit; Invitation letter to instruct graduate thesis, essays, seminars.	Exh.06.17	2012
73.	Monthly pay-sheet	Exh.06.18	09/2012
74.	Decision on establishment of the laboratory and appointment of chief of the laboratory.	Exh.07.01	2006
75.	Decision on library staff recruitment and appointment of librarian.	Exh.07.02	2012
76.	Decision on IT staff recruitment.	Exh.07.03	2012
77.	Decision on equipment management staff recruitment.	Exh.07.04	2012
78.	Decision on appointment of learning counselor.	Exh.07.05	08/12/08
79.	Regulation of MOET for Students Recruitment of Universities and Colleges 2011	Exh.08.01	2011
80.	Handbook for students' recruitment at universities and colleges	Exh.08.02	2008 2011
81.	Passing Grades 2011	Exh.08.03	08/08/09
82.	Regulation No. 43	Exh.08.04	2007
83.	List of Counselors	Exh.09.01	17/05/10
84.	Meeting timetable for new students.	Exh.09.02	10/09/09
85.	Introduction of Can Tho University, College of Engineering Technology, Department of Electrical Engineering.	Exh.09.03	2012
86.	Notification of Student Meeting in the beginning of academic year.	Exh.09.04	9/2012
87.	Guidance for evaluation of student discipline.	Exh.09.05	05/12/08

88.	Detailed guidance for evaluation of student discipline	Exh.09.06	2008
89.	Functions, powers and responsibilities of the College, Department, counselors in the support of course registration of students.	Exh.09.07	05/10/11
90.	Full-course Study Plan	Exh.09.08	2009
91.	Cultural plan	Exh.09.09	2012
92.	Health topics plan	Exh.09.10	2012
93.	Announcement of room funding division for Faculties with information on capacity.	Exh.10.01	2012
94.	Halls, on-site evidence and pictures.	Exh.10.02	2012
95.	Libraries, on-site evidence and pictures.	Exh.10.03	2012
96.	The decisions to set up laboratories at Electrical Engineering Department.	Exh.10.04	2006
97.	The summary sheet of assets inventory in 2011	Exh.10.05	2011
98.	Labor Safety Regulation of CTU	Exh.10.06	11/12/07
99.	Medical Policy of CTU	Exh.10.07	2012
100.	Website details infrastructure of CTU	Exh.10.08	2012
101.	Proceedings of the department meeting	Exh.11.01	2012
102.	Staff Evaluation form	Exh.11.02	
103.	The results of students' evaluation on the courses	Exh.11.03	2009-2010 2010-2011 2011-2012
104.	Plan for study of student	Exh.11.04	18/09/12
105.	Evidences on meetings with alumni and labor market	Exh.11.05	2012
106.	Curriculum: Electrical Engineering Programs, course 33	Exh.11.06	2007
107.	Decision No.67 on quality accreditation. Decision N^{o} 29/2008/QĐ-BGDĐT (MOET)*	Exh.11.07	2010-2011
108.	Decision on appointment of Dean and Vice-Dean of Engineering and Technology College.	Exh.12.01	21/05/12
109.	Plan on personnel recruitment.	Exh.12.02	2012
110.	Regulations on recruitment and requirements on the process to improve the qualifications for CTU academic staffs.	Exh.12.03	16/10/09
111.	Regulations on procedures and management of staff training.	Exh.12.04	22/08/08
112.	Decision on allocation of funds in training and fostering staffs.	Exh.12.05	22/08/08
113.	Questionnaire for labor market surveys	Exh.13.01	2012
114.	Data analysis results of labor market surveys	Exh.13.02	2012
115.	-The meetings with staffs in the department and college - Results of feedback from vice Rectors, leaders, lecturers, researchers	Exh.13.03	10/09/12
116.	Course evaluation form	Exh.13.04	2012
117.	Regulations on performing course evaluation	Exh.13.05	06/03/08
118.	Questionnaire for graduates survey	Exh.13.06	2012
119.	Results of data analysis of graduates surveys	Exh.13.07	2012
120.	Means of communication for questionnaires for stakeholders	Exh.13.08	2012
121.	Statistic of graduates	Exh.14.01	13/07/12

			24/08/12
122.	Graduates feedback	Exh.14.02	2012
123.	Alumni feedback	Exh.14.03	2012
124.	Data on researches of the department	Exh.14.04	2012
125.	Handbook for learning counselor	Exh.14.05	2008-2011
126.	Decision on allocation annual funds in scientific research (2011)	Exh.14.06	2011
127.	Decision on allocation subject of science to students	Exh.14.07	2012
128.	The invitation of local governments in Mekong Delta to research.	Exh.14.08	2011 2012
129.	Questionnaire about labor market needs of Electrical Engineers	Exh.15.01	11/09
130.	Minutes of workshops, seminars and conferences with labor market and alumni; quantitative data analysis on the minutes.	Exh.15.02	2012