



**ASEAN
University
Network**



**HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY AND EDUCATION
FACULTY OF GRAPHIC ARTS AND MEDIA**



SELF-ASSESSMENT REPORT FOR AUN-QA

**BACHELOR OF ENGINEERING
IN PRINTING ENGINEERING TECHNOLOGY**

**The 166th AUN Quality Assessment at Programme Level
November 12th – 14th, 2019**



AUN-QA SELF-ASSESSMENT REPORT
of the Bachelor of Engineering in
PRINTING ENGINEERING TECHNOLOGY

We hereby confirm to approve this AUN-QA Self-Assessment Report of the Bachelor of Engineering in Printing Engineering Technology programme for assessment according to AUN-QA Criteria (V3.0).

A handwritten signature in blue ink, appearing to read 'Lê Công Danh', with a horizontal line underneath.

Lê Công Danh

Acting Dean

Faculty of Graphic Arts and Media

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LIST OF ABBREVIATIONS

No.	Abbreviations	Explanations
1	AEC	ASEAN Economic Community
2	AUN	ASEAN University Network
3	CDIO	Conceive - Design - Implement - Operate
4	CLOs	Course learning outcomes
5	CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
6	DLC	Digital Learning Center
7	ELOs	Expected Learning Outcomes
8	EMO	Office of Equipment Management
9	EXH	Exhibition
10	FGAM	Faculty of Graphic Arts and Media
11	GAPO	General Administration and Personnel
12	GPA	Grade Point Average
13	HCMUTE	Ho Chi Minh City University of Technology and Education
14	ISO	International Organisation for Standardisation
15	KPI	Key Performance Indicator
16	LMS	Learning Management System
17	MoET	Ministry of Education and Training
18	MOOC	Massive Open Online Courses
19	OAA	Office of Academic Affairs
20	OASA	Office of Admission and Student Affairs
21	PDCA	Plan-Do-Check-Act
22	PET	Printing Engineering Technology
23	POs	Programme objectives
24	QAO	Quality Assurance Office
25	SAR	Self-Assessment Report
26	SAT	Scholastic Assessment Test
27	SSC	Student Services Center

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PART I: INTRODUCTION

1. Executive Summary

Based on the mission of Ho Chi Minh University of Technology and Education (HCMUTE), the Printing Engineering Technology (PET) programme objectives were well defined to give students the knowledge to be successful in this rapidly developing field. The PET curriculum is designed to provide students with not only the general knowledge of social sciences and natural sciences but also the professional skills in conceiving, designing, implementing and operating systems in industrial and social context. Additionally, the PET programme combines lecture-based and practical application courses in order to cover real-world problems. Moreover, to enter a new era of rapidly increasing economic globalisation, these programme also aims at providing interdisciplinary teamwork and communication skills to prepare graduates to function effectively and responsibly in diverse environments.

HCMUTE has put efforts to comply with AUN-QA requirements and continually improved the effectiveness of its quality management system. On the roadmap of the university to achieve approval by AUN-QA assessment committee for 20 training programme by 2020, PET programme is going through the assessment process in 2019.

2. Organisation and Approach of Self-Assessment Report

A 7-member team was formed in July 2018 to complete the Self-Assessment Report (SAR) for PET programme including Dean board members, Department Head and experienced lecturers. This team had to complete the tasks of studying AUN criteria, collecting evidence and writing report for self-assessment activities. Each team member was assigned one or more tasks depend on their skills by the team leader. The team leader was the one to finalise the SAR in cooperation with the Quality Assurance Office. The SAR was written according to AUN-QA criteria V3.0 with the following 4 parts:

- ✓ Part 1: The introduction
- ✓ Part 2: AUN-QA criteria.
- ✓ Part 3: Strengths and Weaknesses Analysis
- ✓ Part 4: Appendices

3. Brief History of the Ho Chi Minh University of Technology and Education

Ho Chi Minh University of Technology and Education (HCMUTE) is located in Ho Chi Minh City, Viet Nam. It was the first university established to offer the Technical Education Programmes from in October 1962. Until now, the university has become one of the leading universities in training and supplying high quality human resources in the Vietnam.

HCMUTE offers high quality undergraduate as well as graduate programme in a variety of fields. The university currently has more than 25,000 full-time undergraduate and graduate students. Among approximately 604 academic staff, more than 157 are full-time faculty members with doctorate degrees and 41 are holding Associate Professor Title. At HCMUTE, we believe in the core values of lifelong learning, through which students are motivated to self-construct knowledge and skills by discovering and learning by doing, to improve their creative potential, to fulfill their own aspirations and to serve the community.

Table 1: Brief history of HCMUTE

1962 – 1972	Board of Technical Education (founded on October 5 th 1962)
1972 – 1974	Nguyen Truong To Centre for Technical Education in Thu Duc
1974 – 1976	Thu Duc College of Education
October 27th 1976	Thu Duc University of Technical Education
1984	Merged with Thu Duc Industrial Vocational School
1991 – Present	Merged with Technical Academic staff Training School No.5 and became HCMC University of Technology and Education

Based on on its traditional fortes in science, engineering and technology, HCMUTE is now offering: 07 Ph.D.'s programmes, 14 Master's programmes, 30 Bachelor's programmes.

3.1. Vision, mission and core values of HCMUTE

- ❖ **Vision:** HCMC University of Technology and Education renovates its operation model to be fully autonomous, turning itself into an entrepreneurial institution. The university aims at becoming a leading hub for training, research, innovation and entrepreneurship in Vietnam, which can be par with other regional and international prestigious universities.
- ❖ **Mission:** HCMC University of Technology and Education is to provide top quality training, research, and technology transfer in Vietnam. It is committed to continuous innovations and creativity, offering high quality human resources and scientific products to the fields of vocational education, science and technology to meet the demands of the socio-economic development the country and the region.
- ❖ **Core values:** The core values of a progressive and modern education which have always been and will be appreciated, preserved, and creatively implemented by HCMUTE are:
 - ✓ Upholding and implementation of Vietnamese people's humane traditional values.
 - ✓ Cultivation of talent and creativity, with a focus on training professional skills and responsibility.
 - ✓ Respect for the learners and community's benefits. Building an ever- learning society.
 - ✓ High regard for quality, effectiveness, and innovation in activities.
 - ✓ Integration, cooperation and sharing.

3.2. Organisational structure of HCMUTE

Organisational structure of HCMUTE, shown in Figure 1, includes 6 main parts: a University council a Presidential board, an Academic & Scientific committee, 15 Academic faculties, 16 Functional offices and 17 Centers. Deans of faculties all hold PhD degrees. The University council is governance body consisting members from both university and other stakeholders. The Presidential board consists of one President and two Vice-Presidents who are responsible for supporting the President to monitor academic faculties, functional offices and centers. Besides,

according to the autonomy status, a University committee has been formed to supervise and control the system. Also, an Industrial advisory board consisting representatives of industrial partners was established to contribute advices to the university managers.

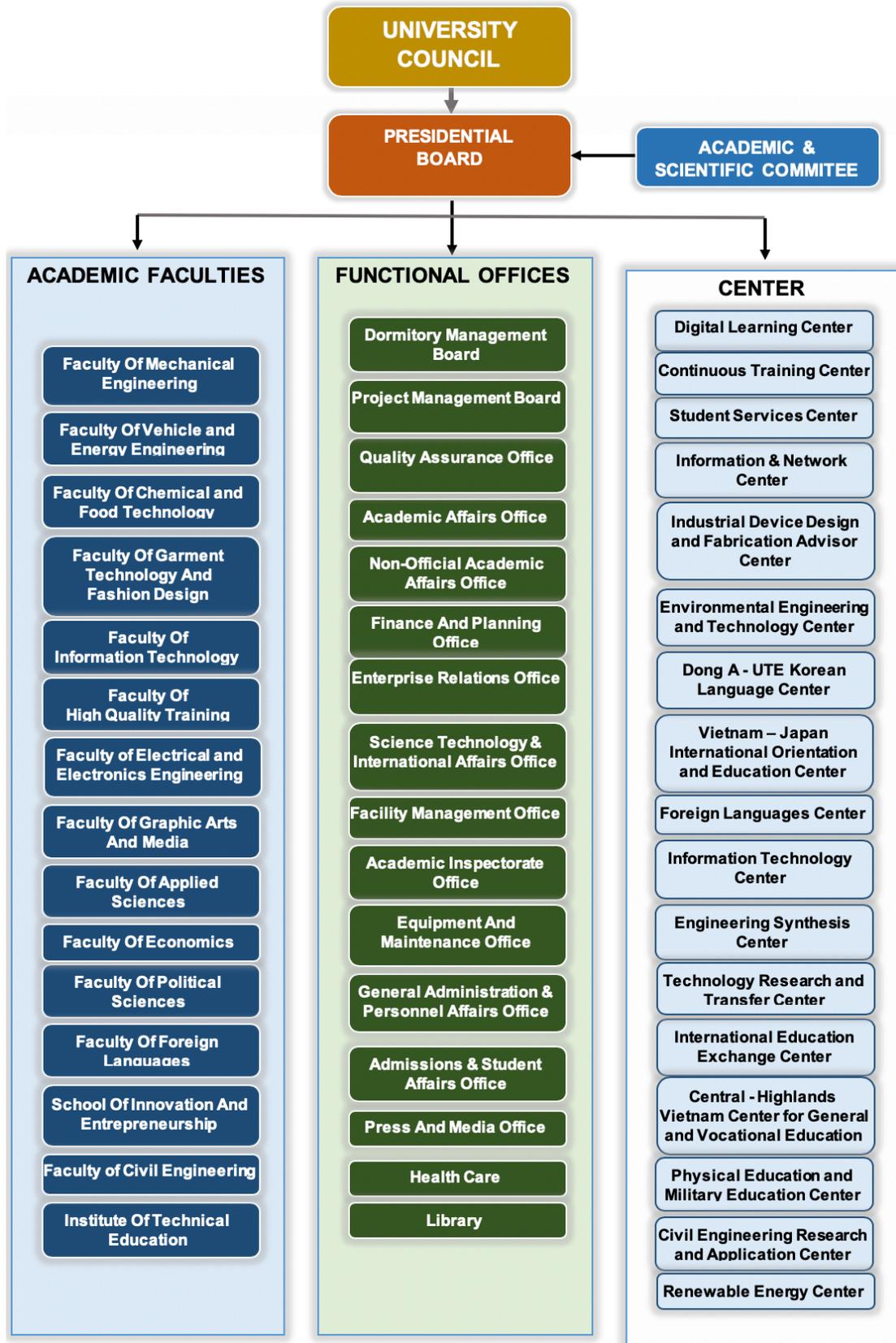


Figure 1. Organisational structure of HCMUTE

3.3. Quality assurance system of HCMUTE

Quality Policy of HCMUTE is to continuously upgrade quality of teaching, learning and scientific research to provide students with the best conditions to develop comprehensively their professional skills in order to satisfy the demands of society and international integration.

Quality Assurance Office (QAO) was established in 2008 according to Ministry of Education and Training (MOET)'s regulation in order to improve the educational quality in the whole university. QAO is responsible for quality management with a system of 42 procedures following the International Organisation for Standardisation (ISO) 9001 standard. QAO also performs internal quality assessment for programmes at institutional level in accordance with national, regional and international standards.

QAO currently has 6 staff who regularly attend QA training courses in order to improve our internal quality assurance system. HCMUTE has got a number of staff who are qualified to be educational assessors, e.g. one of whom was entitled AUN assessor an education assessor of Department of Education Testing and Accreditation (MOET) since 2014, a member of assessment committee of Educational Assessment Center of Da Nang University. The QA milestones of HCMUTE since 2005 are shown in **Table 2**.

Table 2. Overview of the assessment/accreditation of HCMUTE

Year	Programme / Institution	Assessed / Accredited by
2005	Quality Accreditation at Institutional level	MOET
2007	Quality management certification	ISO 9001
2011	External Assessment of TVET in EEE	MOET
Mar. 2016	AUN-QA Assessment at Programme level: – <i>Automotive Engineering Technology</i> – <i>Electrical and Electronics Engineering Technology</i> – <i>Mechatronics Engineering Technology</i>	AUN - QA
Nov. 2016	Quality Accreditation at Institutional level	MOET
Dec. 2016	AUN-QA Assessment at Programme level: – <i>Construction Engineering Technology</i>	AUN - QA
Nov. 2017	AUN-QA Assessment at Programme level: – <i>Machine Manufacturing Technology</i> – <i>Thermal Engineering Technology</i> – <i>Electronics Communication Engineering Technology</i>	AUN - QA

	– <i>Environmental Engineering Technology</i>	
Dec. 2018	AUN-QA Assessment at Programme level: <i>1. Mechanical Engineering Technology</i> <i>2. Automation and Control Engineering Technology</i> <i>3. Industrial Management</i>	AUN – QA
Dec.2019	AUN-QA Assessment at Programme level: <i>1. Printing Engineering Technology</i> <i>2. Garment Technology</i> <i>3. Computer Network</i>	AUN-QA (On process)

4. Brief description of the Faculty of Graphic Arts and Media (FGAM)

Established in 1987 with the name “Faculty of Printing Technology”, our Faculty was the only place for training engineers of Printing Technology. In 2006, it was renamed into Faculty of Graphic Arts and Media (FGAM).

FGAM has been continuously developing in terms of human resources, facilities as well as education and research activities in order to meet the various demands of graphic arts and print media. Currently, there are totally about 500 students in FGAM. From 1987, FGAM has trained over 2,000 engineers in the printing media field, some of them have owned major enterprises.

To adapt with of the labour market beside PET programme, FGAM has also complete the Graphic Design programme. With the first enrollment of 50 students held in 2018. Since then, the FGAM faculty has recruited 50 students each year thus , the Draphic Design Department has more than 100 students studying till now.

4.1. Vision, mission and core values of FGAM

- ❖ **Vision:** FGAM will become the leading institution in training, scientific research and technology transfer in graphic arts and printing media field in Vietnam, approaching regional and international standards.
- ❖ **Mission**
 - ✓ To become the leading unit in training human resources with good expertise, high creative power and high responsibility in graphic arts and printing media field.
 - ✓ To cooperate firmly with the university and the industry in training, scientific research and technology amelioration to apply into actual production to serve the industrialisation and modernisation of the nation.
- ❖ **Core Values:** FGAM always bases on the solidarity and innovation which are the key for the common activity and development.

4.2. Organisational Structure of FGAM

There are 14 faculty members serving in FGAM, including 02 PhDs, 11 Masters and 01 Bachelor. FGAM has two undergraduate programs which are Printing Engineering Technology and Graphic Design.

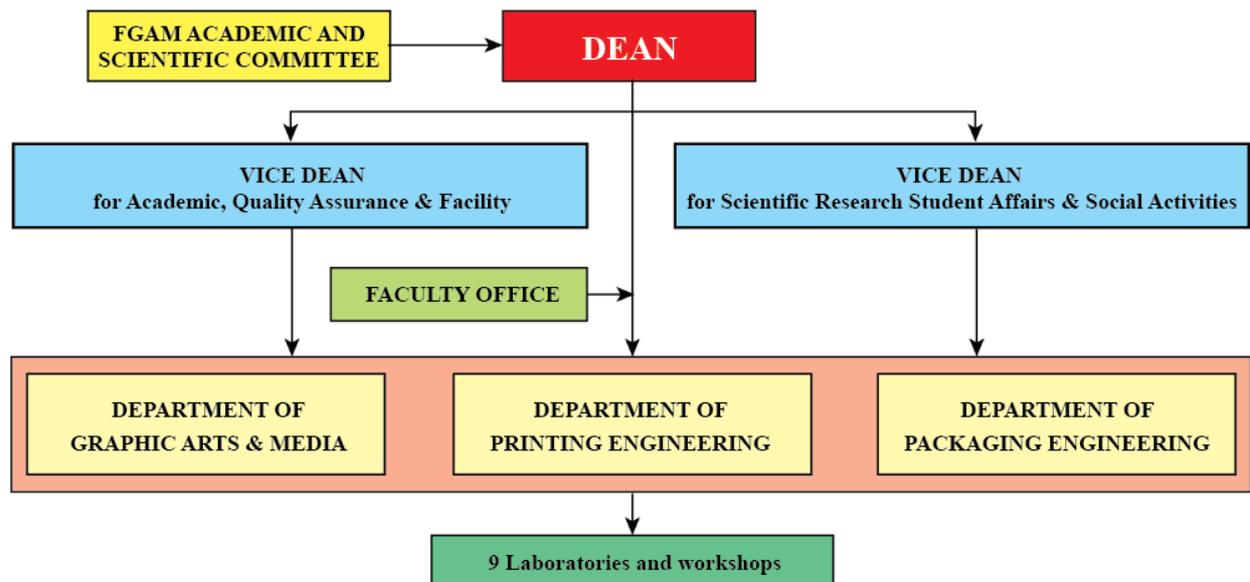


Figure 2. Organisational Structure of FGAM

5. Brief History of the Printing Engineering Technology Programme

The PET programme was built and first offered to students in 1987 who were the first bachelor of printing technology in Vietnam. The PET programme trained students to become engineers in the printing industry with basic scientific knowledge, industrial knowledge and professional printing technology knowledge.

The PET programme has been continuously improved in order to meet the various demands of printing media for the knowledge of social sciences and natural sciences communication and teamwork skills in accordance with bachelor's degree level.

FGAM has fruitful cooperation with enterprises in printing filed and been receiving supports from them in terms of scholarship, internships, scientific research funding or cooperation (Giay Lan Vi company, IN7 company...).

International cooperation of the FGAM has also been enhanced with esteemed universities in the world and in the region. Every year, the FGAM appoints 01 academic staff to attend a specialist academic staff training in Germany. In addition, the faculty also signed a memorandum of understanding on student exchange with Chiba University - Japan, Chulalongkorn University – Thailand and has sent exchange student to the partner.

After graduation, students are able to work in both domestic and foreign printing companies or in printing training centers. They have the ability to analyse, solve problems and evaluate technological solutions, to design and manage a printing company, and to have effective communication and teamwork skills, professional attitudes suited with the requirements of the printing industry and society.

❖ Job Opportunities:

Students completing the Printing Engineering Technology Bachelor at the HCMUTE have an abundance of job opportunities throughout the graphic communication industry. All the recent graduates have taken their positions in the world of graphic design, printing and publishing, digital imaging, and photography. Such jobs include but not limited to:

- ✓ Graphic Design Specialist
- ✓ Digital Marketing Manager
- ✓ Project Manager
- ✓ Digital Graphic Designer
- ✓ Technology Manager
- ✓ Production Coordinator in Print Production
- ✓ Print Technician
- ✓ Imaging Specialist

PART II: AUN-QA CRITERIA

1. Expected Learning Outcomes– ELOs

1.1. The expected learning outcomes have been clearly formulated and aligned with the vision and mission of the university

The Programme objectives (POs) of PET programme which are determined in compliance with the vision, missions of HCMUTE and FGAM are shown in **Figure 1.1**.

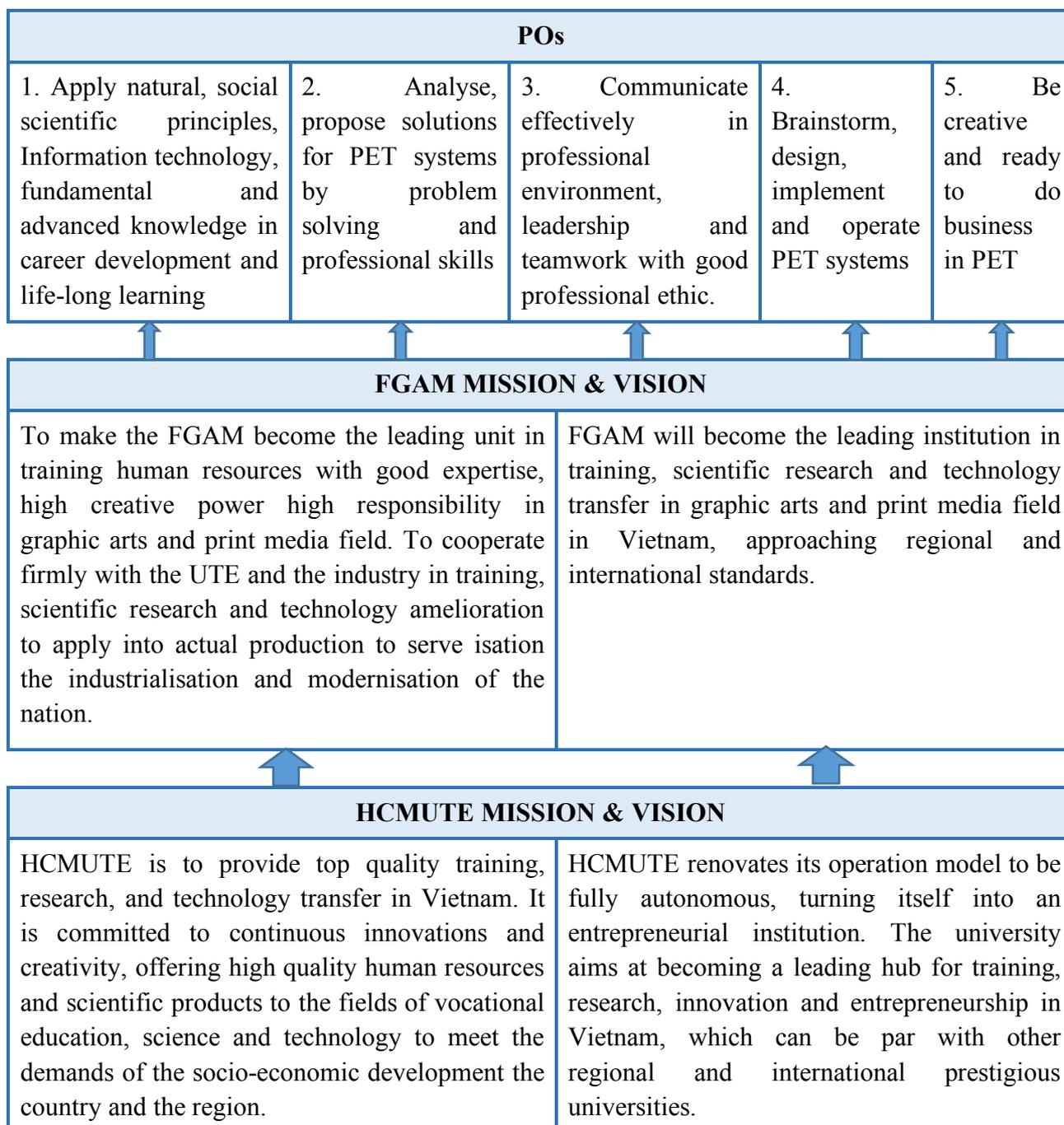


Figure 1.1: The consistency between the objectives of HCMUTE's mission & vision, FGAM's mission & vision, and PET Programme Objectives

In order for the PET graduate to achieve those POs, the ELOs of PET programme have been formulated in terms of knowledge, skill, attitudes with the levels of learning following Bloom Taxonomy as shown in **Table 1.1**.

Table 1.1: Matrix of Programme objectives vs. Expected learning outcomes for PET

POs	ELO cluster	Code	Contents
1. Apply natural, social scientific principles, information technology, fundamental and advanced knowledge in career development and life-long learning	General knowledge	ELO1.1	Be able to apply natural, social scientific principles, Information technology in career development and life-long learning.
		ELO1.2	Be able to apply fundamental knowledge in PET.
		ELO1.3	Be able to apply advanced knowledge in analysing technology, technique, aesthetics and management of print production process.
2. Analyse, propose solutions for PET systems by problem solving and professional skills	Professional knowledge	ELO2.1	Be able to analyse, summarise, generalise problems and solutions in PET.
		ELO2.2	Be able to test in printing from sampling to implementation, measurement and evaluation hypothesis.
		ELO2.3	Be able to identify and analyse a PET system in terms of equipment, manufacturing process and quality control.
3. Communicate effectively in professional environment, leadership and teamwork with good professional ethic.	General skills	ELO3.1	Be able to organise tasks and work in team effectively to solve professional problems.
		ELO3.2	Be able to communicate effectively in various methods.
		ELO3.3	Enhance ability of using English in printing.
	Attitudes	ELO4.1	Be able to perform good profession ethics, self-disciplines, industrial manners and self-learning spirit.
4. Brainstorm, design, implement and operate PET systems	Professional skills	ELO4.2	Be able to evaluate responsibilities of working positions and the links among positions.
		ELO4.3	Be able to conceive, design, implement and operate print production process.
5. Be creative and ready to do business in PET POs	Professional skills	ELO5.1	Be able to manage a PET company
		ELO5.2	Be able to do business in PET

The ELOs of PET programme have shown a suitability to industry's requirements, through the survey by e-mail, in meetings, expectation of teachers, students, alumni... and the vision and

mission of HCMUTE (as Figure 1.1), especially in terms of creativity and entrepreneurship in engineering (ELO13, ELO14). *[Exh.1.1: Development of Expected learning outcomes]*.

Moreover, FGAM has referred to similar training programmes of world-class esteemed universities, such as Idaho State University (USA), Georgia Southern University (USA), Western Illinois University (USA), Chowan University (USA)... to ensure that PET programme could offer its students capability to sustain in the modern internationalised working environment. *[Exh.1.2: Meeting minute for Curricula of reference universities]*.

The visions, missions of HCMUTE, FGAM and PET programme ELOs are all published on the university and FGAM websites [\[http://hcmute.edu.vn/\]](http://hcmute.edu.vn/), [\[http://fgam.hcmute.edu.vn/\]](http://fgam.hcmute.edu.vn/), and printed and attached on the wall of offices and workshops...

They are also communicated with students through the course Introduction to PET which was designed to help freshmen get acquainted with the new environment and successfully move forward on the path of becoming an engineer, a bachelor at HCMUTE. This course equips students with professional orientation, soft skills and ethics. *[Exh.1.3: Vision, Mission, ELOs of HCMUTE and FGAM]*.

1.2. The expected learning outcomes cover both subject specific and generic (i.e transferable) learning outcomes

The ELOs of PET programme are classified into groups of knowledge, skills and attitudes (**Table 1.1**).

The ELOs of knowledge and skills are transferred to the PET through: the general courses (46 credits) provide general knowledge to students. The fundamental and advanced professional knowledge (60 credits) provides basic and advanced knowledge. The practice courses (19 credits) train professional skills for learners. The Capstone Project (7 credits) helps learners to improve their knowledge and skills. Each course in PET and the content of each lesson were designed to achieve ELOs of PET.

ELOs of soft skills can be achieved through the courses and learning activities during class hours. In these courses, in addition to knowledge and skills, academic staffs apply active teaching methods such as Discussion, Group Work, Presentation, Report, Project Base Learning, Case Study... for students achieve these ELOs more easily.

ELOs of soft skills and attitude are also conveyed in PET through activities of the course Introduction to PET, specialised workshops such as: a series of seminars on printing ink with Di Khang company, packaging material with Kien Duc company, G7 of Idealliance, paper with Lan Vi paper company, digital printing technology on canvas, internships in enterprises... In addition, students could make use of extracurricular or social activities of Youth union, site visits to enrich such skills. *[Exh.1.4: Engagement of ELOs into curriculum]*.

Table 1.2: Matrix of Activities vs. Expected learning outcomes for PET

Activities	ELOs									
	1.2	2.2	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2
Introduction to PET course	x	x	x	x	x			x		

Seminars/ Workshops	x		x	x	x			x	x	x
Social activities			x	x	x	x	x			
Internships					x	x	x	x	x	x

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

HCMUTE is implementing effectively ISO procedure in guiding curriculum development and revision. ELOs are periodically reviewed and revised, approximately every 4-6 years for upgrade according to the period of programme construction. PET was built under the programme framework of MoET and be introduced from 1987 in HCMUTE. In 2005, the programme was rebuilt to be Technology oriented. In 2008, the programme was decreased to 184 credits in order to shorten the training time according to the needs of society. In 2012, it was reformed again into 150-credit programme towards CDIO approach with 18 ELOs. And from 2018 till now, it became 132-credit programme with 14 ELOs based on the needs of stakeholders, the needs of integration, ELOs rearrangement, and enhancement for ELOs of creation, start-up and bussiness.

HCMUTE annually conducts surveys to obtain feedback from industrial companies (through meetings, conferences, job fairs, and periodical surveys), alumni (through alumni's day, online surveys), final year students (surveys before graduation) and academic staff (through Faculty-level or Department-level meetings) to revise the curriculum contents. After each survey, FGAM summarises the valuable feedback into a table format as in **Table 1.3** along with the proposed suitable solutions for each issue to conduct the programme adjustment. [*Exh.1.5: ELOs updates in relation with stakeholders' feedback*].

Table 1.3: Matrix of Feedback vs. Expected learning outcomes for PET

Stakeholder	Feedback	ELOs
Industrial companies	Teamwork skills need improvement	ELO3.1: Be able to organise tasks and work in team effectively to solve professional problems
	Communication skills, especially paper-based types, are poor	ELO3.2: Be able to communicate effectively in various method
	Communication in English needs to be enhanced	ELO3.3: Be able to communicate in English
	Practical skills are weak	ELO4.3: Be able to develop ideas, design, implementation, operation, quality control and colour management in PET
	Management skills, Product price calculation are inappropriate	ELO5.1: Be able to manage a PET company ELO5.2: Be able to do business in PET
Alumni	Communication in English needs to be enhanced	ELO3.3: Be able to communicate in English
	Ability to update professional technical specification is weak	ELO1.1: Be able to apply natural, social scientific principles, Information

		technology in career development and life-long learning
Teachers	Management skills, Product price calculation are inappropriate	ELO5.2: Be able to do business in PET
	Self-learning ability for new equipment is low	ELO4.1: Be able to self-learn
	Communication skills, especially paper-based types, are poor	ELO3.2: Be able to communicate effectively in various method
Final year students	Communication in English needs to be enhanced	ELO3.3: Be able to communicate in English
	Internship duration is quite short	ELO4.3: Be able to develop ideas, design, implementation, operation, quality control and colour management in PET

2. Programme Specification

2.1. The information in the programme specification is comprehensive and up-to-date

The PET programme adhered to the regulation announce by Ministry of Education and Training on higher education curriculum framework, including: general knowledge, professional knowledge, skills and attitudes.. The programme specifications consists of the following information, most of which is required by MOET when the University applied a programme for approval of establishment. [\[Appx.1: The PET programme specification\]](#).

- ✓ Programme title: Priting Engineering Technology (PET).
- ✓ Level: Undergraduate.
- ✓ Code: 7510801
- ✓ Training field: Priting Engineering Technology (PET).
- ✓ Degree: Bachelor Engineer.
- ✓ Duration: 4 years.
- ✓ Prospectives: qualified high-school students who meet the conditions under the plan of the HCMUTE.
- ✓ Training procedure: According to higher-education laws for credit-system training model of Ministry of Education and Training. [\[Exh.2.1: Regulation of Undergraduate Education\]](#).
- ✓ Grauduation requirements: According to higher-education laws for credit-system training model of Ministry of Education and Training.
- ✓ Programme Objectives.
- ✓ 14 ELOs consisting 1 ELO on general knowledge, 5 ELOs on professional knowledge, 2 ELOs on soft-skills, 1 ELO on foreign language, 1 ELO attitudes and perception, and 4 ELOs on professional skills.
- ✓ Total credit number: 132 credits, excluding Physical practice and National defence trainings.
- ✓ Teaching and learning method.

- ✓ Student assessment method.
- ✓ The workload is distributed into 12 credits on political theory, 24 credits on natural sciences, 4 credits for social sciences, 3 credits for computer science, 3 credits for Introduction to Printing Engineering Technology, 60 credits on fundamental and advanced professional knowledge, 17 credits on workshop practice, 2 credits for internship, 7 credits on graduate project, 5 credits on physical practice and 165 hours on National defence.
- ✓ Curriculum details, course description, teaching-learning plan, required facilities to support teaching-learning process, guidelines.
- ✓ Job and Post-graduate study opportunities.
- ✓ The curriculum was approved in 2018 and would be annually updated and reconsidered after the first 2 years in use.

Assessment methods: midterm and final exams are conducted in various formats satisfying the decision of Ministry of Education and Training, for example: writing tests, multiple choice tests, essays, oral tests, presentations, reports, and so on.

In HCMUTE, the steps of curriculum construction procedure are:

1. Curriculum/ELOs development plan
2. Department-level meeting/discussion
3. Stakeholder surveys for feedback
4. Finalisation of outcomes and related courses with detailed teaching plan

The curriculum modification procedure must consider:

1. Surveys for feedback from stakeholders (teachers, students, alumni, industry...)
2. Each year, a curriculum is allowed to change maximum 5-7% of its contents. Every two years, the curriculum is reviewed for training efficiency.

In 2012, the 150-credit PET programme was developed with 18 ELOS, according to the approach of CDIO. This was the first time the course Introduction to PET was taught with the aim of helping freshmen get experiences on career through projects, introduction to HCMUTE, FGAM, the curriculum, outcomes, and soft skills... so that students will understand, love, have passion for PET. Soft skills such as teamwork, communication were also strengthened by integrating in courses through teaching methods such as discussion, presentation, report writing... Number of project types was increased from 2 up to 6 (Project for Graphic Arts, Prepress Projects, Printing Technology Projects, Post-press Technology Projects, Economics & Organization Print Production Projects, Printing Quality Management Projects) to help students enhance their knowledge and skills in designing, operation of printing product production. In 2015, the programme was reviewed and evaluated for relevance of the programme under the CDIO.

In 2018, the whole programme was reviewed taking into account, the opinions to develop 132-credit programme. Compared with 150-credit programme, the 132-credit programme had many changes such as: allowing 6 credits for interdisciplinary courses to help students adapt to world changing, accepting the certificate of Massive Open Online Courses (MOOC) to help students become familiar with online learning, learning in advanced schools. To show the flexibility of PET and the education philosophy of international integration in HCMUTE, the curriculum had a course

with business to enhance the relationship between students and businesses and help students to update their knowledge, new technologies, and get familiar with the professional working environment.

2.2. The information in the course specification is comprehensive and up-to-date

Detailed course syllabi for all courses in PET curriculum are standardised in a common format, which includes: *[Exh.2.2: Course syllabi]*

1. Course title (in Vietnamese)
2. Course title (in English)
3. Credit number
4. In-charge teachers
5. Prerequisites
6. Course description
7. Course objectives
8. Course learning outcomes
9. Ethics
10. Course detailed contents
11. Assessment methods
12. Learning materials
13. Date of First approval
14. Level of approval
15. Upgrade progress

The required steps for course syllabus development procedure are:

1. Course syllabus development planing
2. Faculty-level and Department-level meetings for detail mapping
3. Development of course learning outcomes, course contents, assessment methods, teaching methods
4. Surveying for feedback from academic staff and students
5. Upgrading syllabus base on feedback from academic staff and students. Compared with 150-credit curriculum, 132-credit curriculum had many improvements, such as outcomes of the course; teaching methods, assessment are presented in greater detail; the table match between the outcomes of course and the assessment tests to help students understand the knowledge/skills need to achieve at the end of the course.

Syllabi have been updated over the years. Compared with 2012 syllabi, syllabi in 2018 had been added: qualifications according to 6-level Bloom to measure ELOs. Teaching methods, testing and assessment are also included in syllabi to encourage academic staffs to apply active teaching methods. Schedule of assignments, tests is included in syllabi to help learners follow learning process. The matrix of test and ELOs at the end of the course syllabi helps assess the learning outcomes that the learner has achieved.

Besides, lecturer portfolio are also constructed to describe in greater detail the teaching-learning activities, recorded the comments (if any), for academic staffs to recommend syllabi revision that are more suitable in the following semesters. *[Exh.2.3: Lecturer portfolio]*.

2.3. The programme and course specification are communicated, and made available to the stakeholders

PET programme specification is publicly announced to all stakeholders:

- ✓ For teachers: through Faculty/Department level meetings, emails of individuals or website <http://fgam.hcmute.edu.vn/>.
- ✓ For students and prospectives: through website <http://fgam.hcmute.edu.vn/>, posters attached in Faculty/Department offices, freshman welcome activities (the very first week of their enrolment), Introduction to PET course, brochure on Open Day...
- ✓ For alumni: through website <http://fgam.hcmute.edu.vn/>, alumni forums, or emails of individuals (if any).
- ✓ For employers: through website <http://fgam.hcmute.edu.vn/>, or emails (if any).

Course syllabi are publicly announced to all stakeholders:

- ✓ For academic staffs: through Faculty/Department level meetings, website <http://fgam.hcmute.edu.vn/> or individual e-mail.
- ✓ For students: in the first meetings of the courses, on LMS <https://lms.hcmute.edu.vn/> and FGAM website <http://fgam.hcmute.edu.vn/>

3. Programme Structure and Content

3.1. The curriculum is designed based on constructive alignment with the expected learning outcomes

The PET programme consists of theoretical courses, practical courses, experiment courses, projects, capstone project (graduation project) and industrial inter-relation courses. The courses are separated into 3 different levels: general knowledge, fundamental and advanced professional knowledge in accordance with the 14 ELOs. Students will gain the ELOs of knowledge, skills and attitudes through the contents of courses, teaching and learning methods and assessment methods. The curriculum is designed to ensure all ELOs are arranged some content and activities with the appropriate amount of time. *[Appx.2: Matrix of ELOs vs. Course arrangement]*.

Table 3.1: The compatibility between ELOs with curriculum content

ELOs	Curriculum content
ELO1.1	General courses such as: Mathematics 1, Physics 1, Engineering Chemistry, Computer science for Engineers... give students the basic principles of natural sciences, information technology, to develop themselves and life-long learning. <i>[Appx.1. PET programme]</i> .
ELO1.2	Basic courses such as: General Printing, Color Theory and Reproduction in Printing Technology, Printing Materials... help students put into application the core technical knowledge of printing technology.

ELO1.3	Advanced printing technology courses such as: Graphic Design, Technology of Plate Making, Printing Technology, Postpress Processing... help students apply the knowledge of advanced techniques in evaluation and assessment for technology, engineering, art, management in the printing production process.
ELO2.1 ELO2.2	Experiment courses such as: Practice for Physics 1, Printing Materials Practice and Laboratory and some contents of measuring, analysis, synthesis integrated in some courses, such as Printing Quality Management, Color Management, Major Practice for Prepress 2, Major Practice for Press 2... help students gain the skills of analysis, synthesis and testing.
ELO2.3	A part of the production process is integrated in courses such as General Printing, Digital Image Processing, Economics and Organisation of Printing Production... together with the system of 6 projects throughout the PET programme and the annual field trip... will help students enhance skills in defining and building the system.
ELO3.1 ELO3.2	Many active teaching-learning methods are applied, such as problem solving (Practice for Image Processing, Practice for Computer Graphic...), teamwork (Introduction of PET, Digital Preflight Analysis...), presentation (Printing Technology, Postpress Processing...), Project-Based Learning (Major Practice for prepress 1, 2...)... along with methods of evaluation and assessment e.g: oral test (General Printing, Printing Technology...), essays, reports (Printing Quality Management, Packaging Printing Technology...), rubric forms (Project for Graphic Arts, Structure Design and Package Finishing...) to help students not only gain knowledge, professional skills, but also necessary soft skills. In addition extracurricular activities such as annual sports festival, performance celebrate Vietnam Teacher's Day 20/11, Green Sunday, Green summer, spring volunteer, spring design competition, World championship of graphic design... also help students achieve the ELOs on soft skills and attitudes. <i>[Exh 3.1: Methods of teaching, evaluation and assessment align ELOs].</i>
ELO3.3	Teachers are encouraged to teach their course with slides in English (Theory of Color and Reproduction in Printing Technology, Color Management, ...), some of the contents are reviewed in English (Printing Materials, Digital Preflight Analysis...). Moreover, English for Graphic Arts, the extra-curricular activities such as clubs of English, visiting foreign companies (CCL Label Vietnam, Avery Dennison Vietnam...), workshops with foreign companies (Alliance, Kurz...), student exchange activities (Chiba University, King Mongkut's University of Technology Thonburi) and outcomes of English of HCMUTE... help students achieve ELOs of English.
ELO4.1	Basic practice courses (Practice for Plate Making, Offset Printing Practice...), major practice (Major Practice for Press 1, 2...) and workshop practice at businesses... help students to enhance discipline and industrial manner.
ELO4.2	Workshop practices are arranged at businesses, where through observation and working, students can strengthen the knowledge, skills, understanding the working position in companies and the relationship between the working positions. The course Introduction of PET, Economics and Organization of Printing Production, the annual field trip... jointly help students understand the structure of a printing business.
ELO4.3	Many courses are designed for this outcome from the theory courses (Graphic design, Digital Preflight Analysis...) to the basic practice courses (Offset Printing Practice,

	Postpress Practice...), major practice courses (Major Practice for Prepress 1, 2...) to help students to consolidate specialised knowledge, build specialised skills. The system of 6 projects that students have to fulfill within the of PET programme (Project for Graphic Arts, Prepress Projects, Printing Technology Projects, Postpress Technology Projects, Printing Quality Management Projects, Economics & Organisation Print Production Projects) require them to form and develop professional skills in accordance with the philosophy of the CDIO (conceive, design, implement and operate).
ELO5.1 ELO5.2	Courses of economics (Economics & Organisation Print Production, Economics & Organisation Print Production Projects), and courses on business... establish students' leadership and business skills in the printing industry. <i>[Exh.3.2: Course syllabi]</i> .

Various evaluation methods are utilised in PET programme to help students achieve the ELOs. Evaluation methods with quiz, multiple-choice questions (General Printing, Printing Materials...) are often used to assess the ELOs of knowledge. Evaluation methods in lab (Practice for Physics 1, Printing materials Practice and Laboratory...) are used to evaluate the ELOs of experiment skills. Presentation (Technology of plate making, Digital preflight analysis...) is used to evaluate the ELOs of teamwork skills, communication, presentation... Reporting (Printing Quality Management, Economics & Organization Print Production Projects...) are used to evaluate the ELOs of analytical skills, report writing skills, presentation skills. Methods of practice (Project for Graphic Arts, Major Practice for Prepress 1, 2...) are applied for evaluate the ELOs of skills in designing, implementing, operating printing production system...

Moreover, PET programme puts high emphasis on the Capstone project. Students may select to fulfill this final graduation project in groups of 2-4 students under direct supervision of their selected advisor. They have to go through all the steps of brainstorming for solutions, calculating, designing, process developing, sample constructing, etc. Performance at each step will be assessed by advisor, reviewer and defense committee members in rubric matrices among professional and soft-skills.

3.2. The contribution made by each course to achieve the expected learning outcomes is clear

All courses in PET training programme are designed to ensure their suitable contribution to the programme's ELOs. Such contribution is visualised by the mapping matrix between ELOs and courses *[Appx.2: Mapping matrix between ELOs and Courses]* with the reference to the 6-level Bloom's Taxonomy.

The courses are put into the time sequence with increasing levels of learning as shown in **Table 3.2** for specialised courses in printing technology. For example, General Printing course delivered in semester 1 contribute to the ELOs related to soft skills and ability of professional skills (ELO 3.1, 3.2, 4.3....) at level 2 which means students can *understand* (Bloom level 2- Understand) the concept and technology in printing, whereas Printing Technology course and Offset Printing Technology course delivered in semester 4 and 5 contributes to the same ELOs at level 3 and 5 of Bloom's Taxonomy. The course Postpress Processing in semester 4 relates to the ELOs of professional skills at level 3 (ELOs 4.2, 4.3...), and the same ELOs of course Stuctural Design and Package Finishing in semesters 5 are at level 4. The contribution of courses has been reviewed and

revised to ensure that all ELOs are covered through analysing the feedback of academic staffs and students after each school year.

Table 3.2: Matrix among ELOs, teaching and assessment methods

	ELO											Learning activities	Assessments
	1. 2	1. 3	2. 1	2. 2	2. 3	3. 1	3. 2	3. 3	4. 1	4. 2	4. 3		
General Printing (Semester 1)	2			2		2	2	2	2		2	- Presentation - Teamwork - Lectures - Discussion	- Multiple choice test - Writing test
Printing Technology (Semester 4)	3	4	4		3	3	3	3	4		4	- Presentation - Teamwork - Writing report	- Multiple choice test - Writing test - Writing report
Offset Printing Technology (Semester 5)	3	4	5	5	4	3	3	3	4	4	5	- Teamwork - Discussion - Presentation	- Writing report - Rubric presentation

(Bloom’s Taxonomy which includes Level 1_Remembering, Level 2_Understanding, Level 3_Applying, Level 4_Analyzing, Level 5_Evaluating, Level 6_Creating)

3.3. The curriculum is logically structured, sequenced, integrated and up-to-date

The 2018 PET curriculum consists of 132 credits in total which are divided into 2 blocks of general knowledge (46 credits), professional knowledge (79 credits) and Capstone project (7 credits). Among the 79 credits of professional knowledge, there are 2 sub-clusters, including fundamental knowledge (36 credits) and specialised knowledge (43 credits). *[Appx. 1: PET curriculum].*

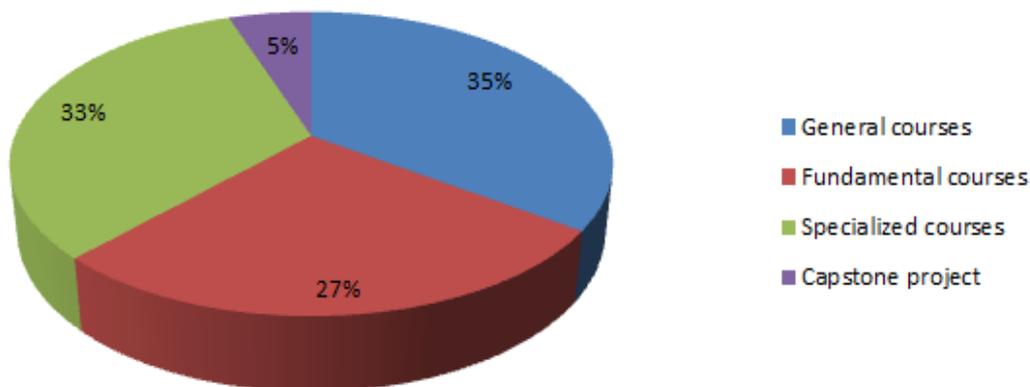


Figure 3.1: Percentage of knowledge blocks in the PET programme

This curriculum structure is chosen due to the following reasons:

- ✓ The faculty’s mission is to train skilled engineers who can work in the industry right after graduation.

- ✓ The curriculum structure consists of both general, cross-border knowledge, which enables students to pursue a variety of careers in the future; and professional knowledge, which provides students with in-depth understanding of scientific principles, analysis and design skills to achieve success in the practice.
- ✓ Students can also pursue higher education after they graduate.

The nominal duration of study of the programme is 4 years. However, it can be extended up to a maximum period of 8 years, based on the individual abilities and plans of students. On the other hand, students can also accelerate their study progress to graduate earlier. [*Exh.3.3: Regulation for higher education*]

Besides the mandatory courses which aim to provide students with core knowledge and skills, elective courses in the optional sections are considered a useful source to broaden students' knowledge and skills in a narrowly specialised field. Some courses are compulsory and aim to support and strengthen their major fields, such as Theory of Colour and Reproduction in Printing Technology, Printing Materials. Some others are elective and to enhance to students' further development of both professional career and postgraduate education or enrich their social knowledge and skills. Also, students could select the multi-disciplinary courses, online courses of foreign universities to enlarge their knowledge. [*Appx.1: PET curriculum*].

At the beginning moment, freshmen students are trained with the general knowledge to get ready for courses in sophomore and junior levels. At the 7th semester, senior students have a chance to take part in internship programme before entering their last semester to do Capstone project at industrial companies or at HCMUTE. To ensure that students can achieve the CLOs of a course in the later semesters, each course has a list of prerequisites and simultaneous courses. After finishing theory, students will do project, there are six projects in entire programme. Such order is announced to students from the very beginning through the course Introduction to PET in semester 1 together with soft-skills and career skills. For example, after finishing the courses Graphic Design, Practice for Image Processing, Practice for Electronic Page Layout, Practice for Computer Graphic, a Project for Graphic Arts will come. Similarly, students will have to fulfill Prepress Projects after finishing Theory of Colour and Reproduction in Printing Technology, Digital Image Processing, Technology of Plate Making, Practice for Digital Preflight Analysis, Practice for Digital Imposition, Practice for Plate Making, and Practice for Structural Design. [*Appx.3: PET programme training diagram*].

The programme has been revised after several overall review cycles to avoid overlaps. In 2012, to reduce from 184 credits to 150 credits, some courses were integrated to make new combinational courses (e.g. the course Theory of Colour and the course Reproduction in Printing Technology were joined to become the course Theory of Colour and Reproduction in Printing Technology...). In 2018, when reducing from 150 credits to 132 credits, the course Major Practice for Press 2 and Major Practice for Press 3 were combined. Not only the content but also the skills and attitudes were integrated. In that way students could be well prepared through the active teaching and learning, for example: team-work skills in the course Graphic Design, Prepress Projects, presentation skills in the course Printing Materials, planning skills in the course Project for Graphic Arts, skills of foreign language in Practice for Computer Graphic, Practice for Image processing, and attitude for self-studying in the course Digital Preflight Analysis.

As presented in sub-criterion 1.3, the curriculum review and revision follow HCMUTE ISO procedure. The cycle of newly developing curriculum is every 4 to 6 years and the assessment frequency is every 2 years. Each time, like other Faculties, FGAM has to follow strictly the rule set by Ministry of Education and Training, HCMUTE taking into account the contribution from stakeholders and is allowed to adjust 5-7% of the curriculum contents. *[Exh.3.4: Updated curriculum]*.

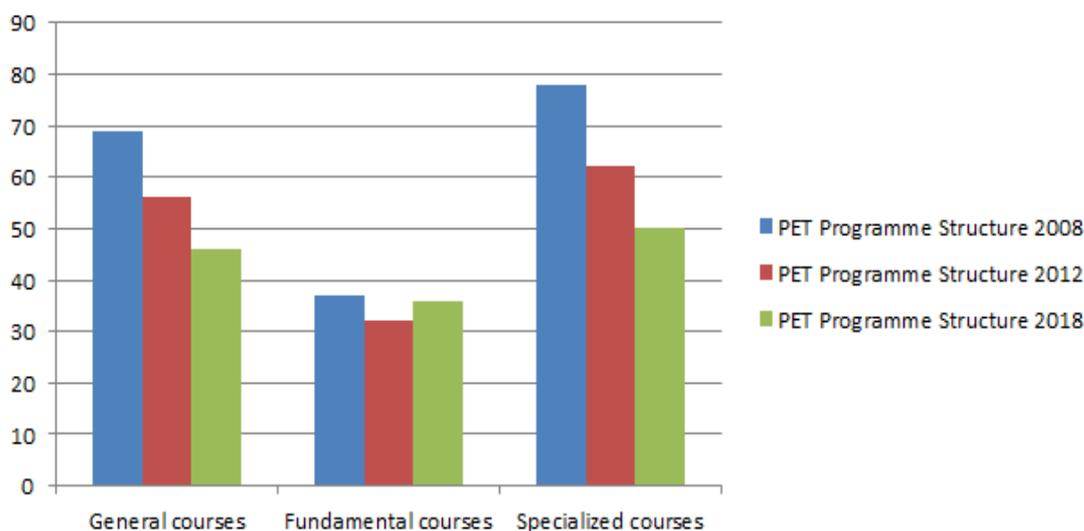


Figure 3.2: Comparison of PET curricula in 2008, 2012, 2018

Along the upgrading process of the curriculum, HCMUTE also considers the changes made by Industrial Revolution 4.0, the internationalisation trends of AEC, CPTPP... to adjust curricula accordingly. For example, in 2018 curriculum, students are encouraged to take inter-disciplinary courses, online courses of recognised and esteemed foreign universities. To adapt with the rapid variation of job types due to the Industrial Revolution 4.0, FGAM students in HCMUTE are allowed to register for courses of other related fields or even change their major or students of other fields could also take courses of FGAM. The Faculty also learn much from the curricula in the same major of outstanding universities in the world such as Idaho State University, Georgia Southern University, Western Illinois University, Chowan University... to make sure our teaching contents are most up-to-date version to be used. *[Exh.3.5: Rubric Matrix with reference universities]*.

4. Teaching and Learning Approach

4.1. The educational philosophy is well articulated and communicated to all stakeholders

The explicit educational philosophy of HCMUTE is “HUMANITY, INNOVATION and INTEGRATION”. This philosophy has been published on the university’s website as well as bulletin boards around the campus. It is also discussed and mentioned regularly in public media and strategic meetings of HCMUTE and FGAM so that it could easily be acquired by all stakeholders. With the objective of becoming the leading institution in training, scientific research and technology transfer in graphic arts and printing media field in Vietnam, FGAM puts significant efforts on collaboration with industrial partners in training, research and put research results into application. *[Exh.4.1: HCMUTE Educational Philosophy; Vision and Mission of FGAM]*.

Academic staff are changing into inspiring coaches, applying student active learning techniques and integrated knowledge to support students' competence in self-study, life-long learning, knowledge application and innovation to adapt with the development of printing technologies in Vietnam and the world. Students are stimulated to create their own knowledge of the field as well as necessary skills in one way or another under the academic staff's coaching.

HCMUTE and FGAM encourage adaptability of students in working and living environment, the core values of life-long learning and thus are doing their best to provide students with a comprehensive development environment for perception, self-cultivation and social communication. Information of PET training programme, opportunities for practice, skill-training, scholarships is regularly posted on social network, Facebook, Fanpage of FGAM. This helps students be confident in their major and develop their own effective approach in study and life.

Humanity is fulfilled through the fact that HCMUTE and FGAM always pay attention on developing an inclusive environment for students to learn, to enrich living skills, to grow individual's potential, psychology and personality, supporting poor students with scholarships from the university, industry, alumni and lecturers.

The amount of scholarships tend to be increased year by year (2014: 30 millions VND; 2015: 90 millions VND; 2016: 130 millions VND; 2017: 90 millions VND; 2018: 180 millions VND). Major sponsors are Lanvi Paper, Liksin Corporation, Printing Joint Stock Company No.7, and Scholarships also come from alumni and lecturers.

The development of life skills, adaptability to the industry is demonstrated by student' participation in annual graphic design competitions (e.g. Adobe Certified Associate World Championship, Design Contest, Confetti Contest Award), or in seminars and conferences (e.g. Digital to Garment Training Workshop, Seminar of Multi Image Defects Analysis Web Inspection, Seminar of Film coating...). [*Exh.4.2: Maintaining and developing comfortable learning environment*].

Innovation is fostered by continuously updating student active teaching-learning methodologies. Academic staff are required to possess up-to-date specialised knowledge and the 21st century advanced teaching methods such as online learning, project-based learning, work-based learning, that are provided by USAID and ABET organisations, to help train students effectively.

Students, at their side, make use of the single- or multi-course projects, site visits, internships at local or international companies enhance their knowledge and skills both theoretically and practically. The products from the projects such as creating paper board boxes, brochures, paper bags (from both structural design and surface design to preflighting art work, outputting printing forms...) meet printing and packaging standards. [*Exh.4.3: Updating advanced teaching and learning methods*].

Integration is focused on continuously in ordinary activities and strategic plans of FGAM. PET curriculum is annually reviewed and every course is supplemented with more advanced teaching materials, references (e.g. Media Standard Print 2006/2016/2018; Technical guidelines on digital preflighting and on color management, and so on). FGAM cooperates with Global Printing Associations, local and foreign printing companies to organise conferences, seminars on printing product quality control (e.g. Idealliance G7 Seminar), on introduction to advanced printing technologies (e.g. Direct Printing on Garment, Digital Foiling, Value-added Printing Techniques...). Thanks to short trainings (e.g. International Specialist teachers Course) in

Germany, English courses in the Philippines and annual international seminars (e.g. 4th Asian Printing Symposium, Idealliance G7), English proficiency together with professional knowledge of academic staff are significantly enhanced. Academic staff are encouraged to use English in communication, teaching materials, class activities to students. Particularly, students' knowledge, English and skills to adapt globally integrating life are also challenged through student exchange programme (e.g. at Chiba University-Japan, at King Mongkut's University of Technology Thonburi-Thailand). [*Exh.4.4: Integration related activities*].

4.2. Teaching and learning activities are constructively aligned to the achievement of the expected learning outcomes

Various teaching and learning strategies are involved to help students not only achieve the ELOs but also motivate the activeness and responsibility in their learning process. To constructively align with increasing difficulty of course content semester by semester, appropriate teaching and learning methods are applied.

For such general courses as mathematics and sciences, interactive lectures illustrated with many practical examples are taught.

Especially, the Introduction to Printing Engineering Technology (PET) course is intentionally delivered in the very first semester in order to provide students with a holistic overview of the PET training programme, structure, contents and teaching plan. MOOC courses are allowed to replace some courses in PET programme; necessary skills for a PET graduate. Effective learning methodologies are also introduced early to students to help them develop learning strategy to gain the best results (e.g. Brainstorming helps students generate new ideas and solutions around a specific problem; "Six Thinking Hats" give thinking processes in a detailed and cohesive way; Mind-map connects major ideas directly to the central concept; PBL helps students learn by doing in project courses and in making simple books, greeting cards, or souvenirs). Moreover, company site visits are also offered to students during this course to enhance their understanding about state-of-the-art printing processes. Students are also required to create learning portfolio through prepared forms, Work-based learning reports for the visits. The course also explains to students the credit-based training programme and that elective courses are ready for their choice from the 2nd semester onwards. [*Exh.4.5: Activities in Introduction to PET course*].

The ELOs of professional knowledge are guided through various teaching methods which conduct their contents. Students must actively take part in teaching-learning activities in class or at home to better achieve the CLOs with high scores. For fundamental PET courses (e.g. Physical Chemistry in Printing Industry; Printing Materials; Theory of Color and Reproduction in Printing Technology; General Printing...) lecturers presentation is partly conducted in class and the rest of the time is for students' teamwork, discussion, practice and feedback.

To motivate students' activeness and responsibility in their learning process, flipped classrooms (digital learning platform) are used. They deliver learning contents by a variety of forms, such as video clips, lecture slides, online quizzes. Students are interested in this combinational teaching methods since they could spend most of the class hours for Q&A, discussion to get deeper understanding. In class, it is the time for students' teamwork, discussion, practice and presentation. This kind of learner-centered model is effectively not only for theoretical courses (e.g. Theory of

Color and Reproduction in Printing Technology; Printing Technology), but also for practice courses (e.g Practice for Electronic Page Layout; Practice for Image Processing).

Teaching assistants (TA) are assigned to enhance the class activities' efficiency, such as discussions and solving problems. *[Exh.4.6: Digital learning activities and TA supports]*.

To strengthen theoretical knowledge, there are many practical and experimental courses in the PET programme. By revealing pictures, diagrams, models and tutorial demonstrations... students gain self-study and gain professional knowledge and skills of complex processes. In addition, lecturers also utilize computer-aided instruction for interpreting some simulations.

Starting from the 5th semester when students enter their professional knowledge section, academic staff emphasize “Learning by doing” method through projects, work-based learning activities so that students could obtain ELOs of general and professional skills and attitudes. There are 6 course projects and 2 multi-course projects in which students are assigned with specific tasks (e.g. Graphic designing; Selecting suitable technology, equipment, product quality control methods...) to fulfill within allowed periods of time. At the end-of-project show, students must be able to apply information knowledge and skills to present their results and products to audience groups (e.g lecturers, authorised people from printing companies). Students are guided how to do the projects with specified guideline and are noticed of the rubrics of writing assessment and oral presentation. *[Exh.4.7: PBL activities in the course Project for Graphic Design]*.

Workshop practice is a compulsory course in the 7th semester in which students are arranged to conduct internship at companies within the semester period. This is a very interesting but also challenging time for students. Taking along what they have learnt before, students must adapt with the real industrial world, self-explore the connection between theory and practice and challenge themselves with technology improvement ideas... A detailed plan for the internship, requirements for internship report in WBL format are carefully instructed by academic staff.

The ELOs of professional skills are achieved by doing capture projects. Students are encouraged to choose topics in groups of 2 or 3. In addition to professional skills (e.g. solving technical problems, conceiving, designing, implementing, operating print production process), students will develop ELOs of soft skills such as teamwork, communication, performing good profession ethics). Capture projects usually come from the order of printing companies (e.g. improving the quality control process, applying software, improving printing and finishing equipment) or from technology transfer requirements of HCMUTE (applying industry standards according to production conditions, such as Offset, Flexo, Gravure ...). They give students the ability to implement and operate PET systems.

The ELOs of soft skills are usually maintained by many interactive activities of teaching and learning. Teamwork and communication skills are specially emphasised in the PET course. In other courses, lecturers often organize short discussions or group working to help students to deeply understand or solve problems and guide them on technical collaboration.

The ELOs of soft skills are also formed and strengthened through many extra-curricular activities with or without the participation of academic staff, such as designing and creating Christmas trees, designing and creating printing products models for 30th year Anniversary of FGAM, also help students to enhance soft skills (e.g. teamwork, attitudes and solving practical problems of material optimisation, structure design, product cost estimation). *[Exh.4.8: Learning by doing activities]*.

To reinforce English skills for Graphic Arts, such as reading materials relating to printing production processes; writing short articles (e.g. device descriptions, terminology explanation, process guidance...); speaking (e.g. holding on a conversation for exchange professional content in English), students not only study through the English for Graphic Arts course, but also are encouraged to take part in international seminars/workshops or to join English clubs, exchange student programme. *[Exh.4.9: English for Graphic Arts syllabus]*.

Facilities including projectors, large size LCD screens are installed in classrooms to connect to teacher's or students' laptops easily to support learning process. Free Wifi is also available around the campus. Library in both tradition and digital forms is providing thousands of e-textbooks and also serving as a learning and researching space. Digital Learning Center (DLC) is well-equipped and internet connected to conduct online classes with foreign partners and to create lecture videos. *[Exh.4.10: Digital learning courses and UTE]*.

FGAM frequently organises and stimulates students to participate in student contests such as Product graphic design, Confetti Contest Awards, Graphic Design International Contest... Students are also allowed to take alternative credits from other foreign universities through student exchange programme (e.g. at Chiba University-Japan, at King Mongkut's University of Technology Thonburi-Thailand), or courses of internship programme at industrial companies. The Office of Enterprise Relations keeps connecting and providing information for all cooperation activities with industry including trainings, visits, internship and job recruitment opportunities. The Office of Science and Technology organises scientific contests for students. The Student service center offers part-time jobs, charity programme, skill clubs... to students. *[Exh.4.11: Learning environment for students]*.

Doing online survey forms for practical and theoretical courses at the end of semesters giving their feedback on the teaching contents, methods and promote changes in order to improve the curriculum quality, students actually help teaching staff find out what adjust accordingly.

Teaching staff participate in active teaching method courses such as online learning, project-based learning and work-based learning. HCMUTE emails these training courses to each department as well as posting on the HCMUTE website. Teaching staff share their teaching experiences in the professional meetings of the department or faculty, or at workshops on teaching methods. By analysing and discussing teaching situations, lecturers' teaching experience is improved. Adjusted teaching methods are updated in course teaching portfolios. *[Exh.4.12: Feedback for teaching and learning ISO procedure]*.

4.3. Teaching and learning activities enhance life-long learning

All teaching-learning activities in PET programme are student-centered. The students are stimulated and required to be active and independent to obtain 8 key competences for life-long learning in accordance with European framework (Communication in mother tongue; Communication in foreign languages; Mathematical competence and basic competence in science and technology; Digital competence; Learning to learn; Social and civic competence; Sense of initiative and entrepreneurship; Cultural awareness and expression). Occupying 19 credits (14.3%) in PET curriculum, courses for Mathematics and Natural sciences will help students develop their logical thinking, application of knowledge into practice to solve problems in statistics and process optimisation.

Lecturers guide students to identify problems and related solutions that suit a given context. Through teamwork assignments, course projects... students may combine individual capability with team potential in overcome obstacles. Lecturers give formative assessment on homework, projects,... to continuously lead students to the positive direction. In this way, students can gradually build up their systematic thinking, analysis and evaluation skills that work with printing process, printing quality control, system efficiency evaluation... to come up with new outstanding solutions. Students, thus, could adapt in different environments. One of the features of our PET programme is the existence of up to 6 single-course projects (6 credits) and 2 multi-course projects (5 credits) distributed from the 3rd to 7th semesters as key stones on the path leading them to a firm and comprehensive competence from sample graphic design, prepressing, printing, postpressing to quality control and economic management.

Study capability and study methods are attached with foreign language competence. Thus, academic staff require students to exploit learning materials, websites of organisations of packaging, paperper board packaging...; websites of companies selling equipment, technologies in printing... are good materials for students to update their knowledge and foreseen development trends or future sustainability.

There are up to 6 courses on printing software (Computer graphics, Image processing, Electronic page layout, Data analysis, Digital imposition, and Structural design). In addition, students must certainly be able to use office software (Microsoft Word, Excel, and Power point) as well as work managing software like e-mindmap... to complete their computer skills for working.

HCMUTE students in general and PET programme students in specific are continuously encouraged to equip themselves with social and civil skills through social dedicating activities such as Green summer, Compassion Tet (Lunar new year), Compassion Autumn Festival, Green Sundays... in which students have to suitably arrange their study time, build up their awareness about and responsibility to society, intention for charity contributions and be more self-responsible in daily life. *[Exh.4.13: Teaching and learning activities enhance life-long learning]*.

5. Student Assessment

5.1. The student assessment is constructively aligned to the achievement of the expected learning outcomes

PET programme enrolls students according to the annual enrollment scheme of HCMUTE which is publicly announced and includes different methods of selection basing on High-school transcripts with priority for students from gifted high-schools or same system of HCMUTE; SAT scores; or National High-school graduation examination scores. The admission score level of HCMUTE in general and PET programme in specific is increasing year by year. This reveals the fact that the quality of input students and the demands for the programme are both increasing. *[Exh.5.1: Student enrollment project]*.

Student assessment in FGAM includes diagnostics, formative and summative forms which are delivered during students' study period and focus on both knowledge and skills related to the CLOs. *[Exh.5.2: HCMUTE Calender]*

Diagnostic assessment, such as quick quizzes/short questions/surveys at the beginning of a course, questions and answer during class hours, is carried out to help lecturers adjust their teaching and

learning activities to accommodate students' level of learning. For instance, in Post press processing or Post press practice, lecturer always check students before each subject in the form of questioning, or ask several random students to summarise the important parts of the previous subject affecting the next subjects. *[Exh.5.3: Procedure and sample of writing examination and marking guides]*.

The course projects are good means for assessing not only students's knowledge but also their skills, especially soft skills such as communication skills both written and verbal, teamwork, creativity and analytical. All courses have been appropriately selected and arranged to fit with each other in terms of learning outcomes, contents and assessment methods. *[Exh.5.4: Projects by learning of students]*.

The assessment activities that FGAM is conducting are distributed quite evenly within a semester time for both formative to summative purposes through writing tests, multiple choice tests, teamwork assignments, in-class quizzes, etc with clearly defined grading scheme. Currently, some subjects are applied in project-based learning such as Graphic Design, in which evaluation means is a system of assignments with many small exercises.

Formative and summative assessments take equally 50% of the final results. Such frequent assessment is not only to continuously examine students' progress but also to offer academic staff instant feedback to see if their teaching methods work well or need immediate appropriate modification. *[Exh.5.5: Syllabi of theoretical courses, experimental courses, course projects]*.

No matter which form is used for assessment, CLOs must be referred to and assessed, and the Department chairman or the authorised in-charge persons must review before the test date in order to ensure the correctness and relations to CLOs of every question. For instance, in the course Graphic Design and the course Practice of Page Layout, academic staffs integrate project-based-learning into the final test, so that students can reaches soft skills of ELO3.1, ELO3.2 and design capabilities of ELO4.3. Student can gain plan skills of ELO4.1 with project of Practice for Electronic Page Layout. *[Exh.5.6: Procedure for examination design, safeguard, replication, receive & delivery, spot]*.

During the 7th semester, students will do internship in companies and participate directly in manufacturing or printing process for this purpose. Students are at first introduced to the companies, bring along the Nomination letters issued by FGAM and the Workshop Practice course syllabus. The companies take them in and assign specific tasks to them that fit with the requirements of the course. Students base on their studied knowledge and what they observe and do in the real context of the companies to develop a report and submit to the company managers for their comments on 2 main aspects: working attitudes and capability (knowledge). After completing the internship period, students come back and submit their commented report and present their achievements to their advisors.

The very last course that students have to take in PET programme is the Capstone project. Only students satisfying the required criteria could receive a project assignment. *[Exh.5.7: Regulations of university and college in credit system]*. After having selected project topic, students will be guided by their academic staff or both academic staff and company representatives to approach the existing technological problems in the company related to their Capstone projects. The project implementation and report must be supervised and revised by academic staff to meet with the prescribed progress and required ELOs of PET programme. Students must develop a clear

implementation plan from the beginning to assure their quality and progress. By the completion time, FGAM will establish a Dissertation defense committee including faculty members and industrial representatives to assess students' results. Assessment criteria are publically announced in rubric format in prior to the defence date. *[Exh.5.8: List of assigned supervisors and reviewers]*.

5.2. The student assessments including timelines, methods, regulations, weight distribution, rubrics and grading are explicit and communicated to students

HCMUTE has clear regulations on all types of examinations, from examination timetable examination types, weight of formative and summative assessment results in the final score, to rubric assessment for project-based courses. In the first week of each semester, academic staff announce all this information to students through course syllabus: contents, requirements, teaching materials, formative and summative assessment methods and moments. Such information is also published on LMS platform *[https://lms.hcmute.edu.vn]* which students have their right to access. *[Appx.1: PET curriculum], [Exh.5.9: Course syllabi on FGAM and LMS]*.

HCMUTE School-year based teaching time table indicates detail of timelines for study period, examination and vacation times. Weekly teaching contents and assignments are revealed in course syllabi. Capstone projects' period, submission dates, reporting dates, etc are also clearly stated.

Methods also vary for formative and summative assessment but the weight is fixed at 50% for each although there would be more work for formative assessment. To be considered to pass a course, students must have all summative assessment grades not less than 3 (out of 10) and the average score of the course must be higher or equal to 5. This is to prevent students from disappreciating the knowledge delivered in the second half of the semester (after the midterm examination) no matter how high their midterm score is.

For project-based courses or multi-course projects, the assessment is usually done in rubric forms. In any ways, assessment criteria must be transparent and consistent among the related courses. For example: the rubric form for presentation efficiency in one course must be compatible with that of any other courses in which presentation efficiency is also assessed. *[Exh.5.10: Assessment rubrics and marking schemes]*.

Subjects assessed with the rubric method, specific criteria are notified to students before each subject for them to prepare better.

HCMUTE general regulations about assessment which are aligned with MOET regulations are announced to students from admission days, printed in student handbooks and published on university website. Academic staff guide students to get information when needed from these sources. *[Exh.5.11: Student handbook]*.

HCMUTE grading scale of 10 in comparison to grading scale of 4 and students' competence classification are shown in Table 5.1. *[Exh.5.12: GPA for classification of students' studying results]*.

Table 5.1: Student competence grading scale

GPA scale of 10	Equivalent GPA scale of 4	Classification
$8.5 \leq \text{GPA} \leq 10$	$3.4 \leq \text{GPA} \leq 4.0$	A. Good

$7.0 \leq \text{GPA} \leq 8.4$	$2.8 \leq \text{GPA} \leq 3.3$	B. Fair
$5.5 \leq \text{GPA} \leq 6.9$	$2.2 \leq \text{GPA} \leq 2.7$	C. Average
$4.0 \leq \text{GPA} \leq 5.4$	$1.6 \leq \text{GPA} \leq 2.1$	D. Weak
$\text{GPA} < 4.0$	$\text{GPA} < 1.6$	F. Too weak

5.3. Methods including assessment rubrics and marking schemes are used to ensure validity, reliability and fairness of student assessment

Various methods of assessment are applied to ensure validity, reliability and fairness for student assessment.

Validity: According to the ISO standard process for examination paper development, security and copying, handing over examination papers and scores, academic staff work in team to issue some common questionnaires with reference to CLOs. The CLOs assessed in an examination are shown on the papers and then Department chairman or an authorised faculty member will verify the papers to ensure they are aligned to the CLOs. The papers can be disseminated once they are signed by the authorised faculty members. *[Exh.5.6: Procedure for examination design, safeguard, replication, receive & delivery, spot].*

In the process of building each course syllabus, student assessment plan, forms of formative and summative assessment, rating ratios are listed. The detailed documentation of the content, teaching methods, and types of evaluation for each ELO are also attached. These documents are approved by the Head of Department.

For example, project course is evaluated not only for the product and its conformity with printing standards, but also for the student's presentations based on CLO-aligned rubrics.

Reliability: All writing tests must have Solutions before examination dates with details for every 0.25 points (out of 10) and carefully checked by the academic staff team to guarantee a fair grading process and results. The more detail the rubric is and the more detailed the grading is, the less mistakes/unfairness may happen and the more transparent and consistent the grading process of academic staff is, even when academic staff may grade students' answers at different times. Also, the peer-review done by other academic staff will also lead to the same true results. *[Exh.5.3 Procedure and sample of writing examination and marking guides].*

For project-based courses, rubrics are necessary tools to grade teamwork, presentation and overall score. Rubrics are also developed for course-projects including single-course projects such as Project for Graphic Design, Prepress Projects, Printing Technology Projects, Post-Press Technology Projects; and multi-course projects such as Major Practice for Prepress 1, Major Practice for Prepress 2.

Fairness: Students understand clearly assessment criteria, grade calculation and are guided to knowledge and skills to obtain CLOs of the courses. Before the final examination, each academic staff team in charge of the same course discusses on structure and contents to be examined and a common grading process. The examination questionnaire is well checked in accordance with CLOs and approved by the Department chairman and authorised person. As a result, in order to obtain good scores, the students should carefully explore and follow up with the learning contents.

Fairly administered:

HCMUTE is applying ISO procedure to supervise examinations for fairness and objectivity. Examination time, examinee roll numbering, examiners' responsibility, inspectorate's responsibility and so on are all well controlled.

All examinees are provided with the same examination condition. All materials, equipment, devices which are allowed to get into examination rooms are announced in advance and clearly stated on examination questionnaires. Solutions are published on Faculty website 2 days after the examination time.

Should students feel unsatisfactory with their obtained examination results, they could submit the Formal complaint for revision by another academic staff who is usually appointed by the Department chairmen. Revised scores will be formally announced along with reasons for modification signed by both Department chairmen and Faculty dean.

All examination documents are stored for at least 2 years at the Faculty except the original Score lists which is kept permanently by Academic Affairs Office. Faculty secretary will keep copied Score lists, original examination papers. Academic staff store teaching portfolios and other formative and summative assessment materials for 2 years. Department chairmen keep original questionnaires and solutions.

To ensure that the assessment process is regularly enhanced (Regularly evaluated), in academic staff' teaching portfolios, there is a section for Semester-end report in which academic staff may key in their propositions for the next turn basing on students' feedback. In case of courses simultaneously taught by many academic staff, group meetings among the academic staff or between the academic staff and the department for efficiency evaluation and further improvements must be organised. For courses in which students' feedback about academic staff' performance, a department level or faculty level meeting is necessary to solve the problems and prevent them from reoccurring. [*Exh.5.13: Lecturer portfolio*].

Additionally, new (non-traditional) assessment methods are developed and conducted in combination with the traditional ones, such as multiple choice tests, combined assessment by department and industrial companies (for some intermediate courses, like Major Practice for Prepress 1, Major Practice for Prepress 2). Industrial companies give assessment on work-readiness, working competence of students while academic staff give scores for ability for problem summarizing/analysing, reporting, presentation in final report.

It is expected that the applied assessment methods provide students a chance to improve themselves afterwards, academic staff are trained to be familiar with and able to flexibly use various methods, for instant, assessment rubrics for theoretical/practical courses, project-based teaching, work-based teaching, LMS question bank creation...

- ✓ Increase the weight of formative assessment score to 50% of the total score and use different methods at different times, e.g. Printing Materials course is assessed by combination of both individual and teamwork assignments).
- ✓ Offer open-book examinations to check ELOs in accordance with Bloom's Taxonomy levels (e.g. Printing Production Management; specialised courses in replacement for Capstone projects).

- ✓ Allow peer-evaluation among students in some tasks (e.g. Project for Graphic Design).
- ✓ Modify rubric assessment forms for more details for every item.

Despite the fact that learning activities occupy the major of students' time, students are still required to participate in extracurricular activities through which they may gain more comprehensive perception about off-campus environment. Especially, they may self-establish responsibility to the society, community through volunteering, charity activities like constructing bridges in remote places, teaching poor children, Green summer, exhibitions, etc. Every time joining in such activities, they could gain 2-5 points for their moral conduct. [*Exh.5.14: Evaluating student training process according to HCMUTE criteria*].

Many assessment methods are used, for example:

- ✓ Writing test: used for courses with requirement to select suitable technology or promote individual innovative opinion (such as Safety And Equipment Familiarisation; Mechanic And Electric of Equipment Printing; Printing Quality Management).
- ✓ Multiple choice test: used for courses which requires understanding and ability for applying theory into practice (such as General Printing; Technology of Plate Making; Printing Materials; Computer And Computer Networking).
- ✓ Essay: used for courses with combined knowledge and teamwork (such as Printing Materials, Technology of Plate Making; Digital Preflight Analysis).
- ✓ Presentation: used for Projects.
- ✓ Oral test: used for project defence (Capstone Project).
- ✓ Homework, Big assignment: used for courses which need students to merge theoretical and practical knowledge, software usage (such as Practice for Image processing; Practice for Computer Graphic; Theory of Color and Reproduction in Printing Technology...).
- ✓ Rubric: used for workshop courses, course-projects, Capstone project.

Course-projects occupy 13 credits and are assigned to students from the 4th to 8th semesters. They are very useful to help students systemise project-based learning activities and contents, and apply knowledge into real problem solving.

Capstone project is a comprehensive evaluation on students' competence including ability to apply knowledge in technical and economic problems, as well as soft skills.

To ensure that teaching staff choose evaluation aligned with CLO, and know how to plan assessment and build rubrics, teaching staff have been nominated to participate in BUILD IT, COMET workshops, such as Workshop for designing, building and testing project course implementation; Workshop for Creating assessment plan for effective assessment and evaluation of student outcome attainment.

5.4. Feedback of student assessment is timely and helps to improve learning

Academic staff develop examination time table, feedback time, result announcement time of their own courses and inform students in order for students to timely adjust their learning activities to achieve CLOs. Besides, academic staff modify their teaching methods in the rest of semester time

to help students obtain the necessary knowledge more easily. *[Exh.5.15: Survey for final course evaluating]*.

The ways to do feedback between students and lecturers vary according to the assessment methods used.

Diagnostic assessment: to assess students' knowledge level before starting a course through various approaches such as interviewing, questions and answers on what old and new knowledge students studied earlier. Academic staff make use of the students' feedback to adjust the teaching activities for higher efficiency. *[Exh.5.16: Quick tests in class]*, *[Exh.5.17: Comment of student for course syllabus on LMS]*.

Formative assessment: Lecturers give feedback to students 1 week afterward with comments on students misunderstanding points and further suggestions. They classify the same mistakes in the lessons and analyse them for the whole class. If the same errors are more than 50% of the class, it means that the teaching method needs to be adjusted to be more accessible and so that the students can understand more precisely. Specifically for reports, academic staff give comments and modification directly on students' presenting days. In this way, other students learn from weakness and strengths of the presenting ones. *[Exh.5.18: Exercise with feedback for students]*.

Summative assessment: Final examination solutions must be published on Faculty website 2 days after the examination time. The final results must come in a week later. Academic staff are ready to explain solutions for students if required. *[Exh.5.19: Procedure for examination and online answers]*.

For course-projects, academic staff disseminate working plan, assessment criteria from the very first week. Students are asked to make their own work plans after receiving their project, meet once per week with questions during their own research instantly adjust if the students are doing in the wrong way, and provide instructions and add-on for missing tasks. It is at this stage that academic staff will have to understand the students' ability from their feedback. Depending on the group working, academic staff will use different approaches and instructions. *[Exh.5.20: Comment for project]*.

5.5. Students have ready access to appeal procedure

To ensure fairness and precision in assessment process, there is a clear examination reviewing process for students. *[Exh.5.21: Appeal procedure]*. After Examination solutions and students' scores are published on online platform <http://online.hcmute.edu.vn>, students have 1 week and right to double-check if their scores are satisfactory or they should need to submit a Formal complaint with clearly stated reasons to the Faculty office.

On receiving the complaints, Faculty secretary will pass them to related Department chairmen to arrange suitable academic staff to re-grade the students' answers. The re-graded scores will later publish with academic staff' reasons if any changes happen.

If students are still not satisfied with the re-graded scores, they have the right to apply another request to the Office of Academic Inspectorate and the Head of the office will work directly with the students and related individual to decide the final score.

6. Academic Staff Quality

6.1. Academic staff planning (considering succession, promotion, re-deployment,

termination, and retirement) is carried out to fulfil the needs for education, research and service

On the basis of Medium-term strategic plans of HCMUTE for 2011-2015 period – vision 2020, and 2017-2022 period – vision 2030, together with the working plan of President’s tenure 2013-2018) [Exh.6.1: *Medium-term strategic plans of HCMUTE*], FGAM also develops its 5-year Medium-term strategic plans [Exh.6.2: *Medium-term strategic plans of FGAM*] which prescribe specific items: academic training strategy, scientific research development strategy and facilities, finance and personnel.

Strategic plan for finance and personnel: FGAM plans for and stimulate faculty members to pursue post-graduate degrees and higher academic ranks (Associate Professor) [Exh.6.3: *Personnel development plan*]. On the other hand, FGAM pushes forward the personnel development focusing on perspective faculty of departments, recruitment of new PhD holder faculty members, fostering excellent students for teaching assistance purposes.

The recruitment demand of FGAM follows the recruitment process of the HR department with the regulation of recruiting masters and PhDs degree holder only. However, such candidates are not supplied by any domestic training institution but only those studying abroad. This is the reason why the academic staff did not develop as quickly as expected. Every year, FGAM needs to recruit 3 to 5 academic staff, but from 2013 until now, FGAM has successfully recruited 1 PhD degree holder academic staff.

Table 6.1: Statistics of personnel demands vs. employed personnel quantity within 2013 - 2018

Year	Demands	Degree			Employed personnel number
		Bachelor	Master	PhD	
2013	3	0	2	1	1 PhD holder
2014	4	0	2	2	0
2015	5	0	3	2	0
2016	5	0	3	2	0
2017	5	0	3	2	0
2018	5	0	3	2	0

Table 6.2: Statistics of FGAM full-time employees within 2013 - 2018

Year	Quantity	Degree/Academic Rank			Retired	PhD pursuing	Quitted
		Master	PhD	Professor			
2013	14	13	1	0	0	2	0
2014	14	13	1	0	0	3	0
2015	14	13	1	0	0	3	0
2016	13	12	1	0	0	3	1
2017	13	12	1	0	0	3	0

2018	13	11	2	0	0	3	0
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Table 6.3: Personnel development plan within 2017 - 2022

Year	Demands	Degree/Academic Rank			Retired	PhD pursuing	Quitted
		Master	PhD	Professor			
2017	17	13	4	0	0	3	0
2018	19	13	6	0	0	2	0
2019	20	13	7	0	0	1	0
2020	20	13	7	0	0	0	1
2021	20	13	7	0	1	0	0
2022	20	13	7	0	0	0	0

6.2. Staff-to-student ratio and workload are measured and monitored to improve the quality of education, research and service

The current personnel of FGAM include 1 PhD, 11 Masters and 3 PhD candidates. Besides, FGAM invites experts from Printing companies to deliver lectures to students.

Table 6.4 shows the number of academic staff teaching full-time for classes (40 hours/week) in which $12 \times 1 = 12$ is the total number of full-time faculty members of FGAM, 4 invited academic staff from other faculties in charge of general knowledge courses with the weight of 0.35, the same weight for visiting academic staff. The equivalent hour is $(2 \times 0.35) = 0.7$

Table 6.4: Number of Academic staff

Title	Male	Female	Total		Percentage of PhDs
			Headcounts	FTEs	
Associate professors	1	0	1	$1 \times 1 = 1$	100
Full-time academic staff (FGAM)	6	6	12	$12 \times 1 = 12$	8.3
Full-time academic staff (non-FGAM)	6	0	6	$6 \times 0.35 = 2.1$	33.33
Visiting academic staff	2	0	2	$2 \times 0.35 = 0.7$	0
Total:	15	6	21	15.8	

Table 6.5 exposes the rate between the numbers of academic staff and students within the most recent 5 years. It shows that the rate is not satisfactory according to MoET regulations (1/20). Fortunately, the difference is not too much. It was 1/22.59 in 2016-2017, 1/21.39 in 2017-2018 and 1/19.36 in 2014-2015 which is also the lowest rate.

Table 6.5: Academic staff and students ratio

Academic Year	Total FTEs of	Total FTEs of	Staff-to-student ratio
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	Academic Staff	students	
2017-2018	15.8	338	1/(21.39)
2016-2017	15.8	342	1/(21.66)
2015-2016	15.8	335	1/(21.20)
2014-2015	15.8	306	1/(19.36)
2013-2014	15.8	324	1/(20.51)

Academic Affair Office is using software to record real working hours and quality. Academic staff are required to fulfill all assigned workload including teaching, research and service tasks according to the regulations as illustrated in **Table 6.6**.

Table 6.6: Standard equivalent workload of academic staff in teaching, research and service

No.	Title	Standard hours for academic staff			Total
		Teaching	Research	Support	
1	Senior lecturers, Professors	900	800	60	1760
2	Lecturers, Assoc. Professors	900	700	160	1760
3	Lecturers, PhD	900	650	230	1760
4	Senior lecturers, Master	900	590	270	1760
5	Lecturers, Master	900	250	610	1760
6	Probationary lecturers	900	250	610	1760
7	Physical lecturers	900		860	1760

Survey results show that up to 90% of academic staff are satisfied with the assigned workload which they may flexibly shift from one to another among the 3 task types on the KPI software. In addition to teaching, academic staff have to conduct research and service tasks such as guiding students to company site visits, or compete in innovation contests. [*Exh.6.4: Workload information and working environment surveys*].

6.3. Recruitment and selection criteria including ethics and academic freedom for appointment, deployment and promotion are determined and communicated

Personnel recruitment strategy of FGAM gives priority to PhD holders in Printing technology, Packaging Technology or related fields as Material Technology, Mechatronics, Chemistry and Information Technology. [*Exh.6.5: FGAM Personnel recruitment strategy*].

HCMUTE awards 15 million VND to newly employed PhD holders. The award for female ones is 20% more than male colleagues. For faculty members achieving PhD degree while working at the HCMUTE, the award is 20 million VND. Moreover, since 2014, the university only recruits Master or PhD holders graduated from English speaking countries. Recruitment criteria and information are publically announced on university website [<http://hcmute.edu.vn>], and the recruitment process is done following ISO standards for personnel development. [*Exh.6.6: ISO recruitment procedure*]. All offered working positions come from the needs of Departments and the development orientation

of the Faculty. Applicants with directly related majors or teaching experience and working experience in big industrial companies are of higher priority. Foreign language proficiency and scientific research ability for applicable solutions are also highly appreciated.

Faculty members have promotion and income increase fairly in FGAM in alignment with the university regulations. Newly employed academic staff have to fulfill one probation year, standards for foreign language proficiency and pedagogical skills, assigned teaching workload... in order to be formally enrolled and take examination for Professional academic career. Professional academic career is classified into the following level: Assisting Lecturer, Lecturer, Senior Lecturer, Distinguished Lecturer, Associate Professor, and Full Professor.

Managing positions are appointed basing on competence and professional major, such as professional knowledge level, research ability and achievements, management experience and election results as stated in the university regulations. Particularly, for the Department Chairman position, the requirements include working in the department no less than 3 years; having already fulfilled university-level research project. For the Faculty Dean/Vice Dean positions, appointed persons must have worked in the faculty for at least 3 years; having already fulfilled university-level research project; having had management experience as Department Chairman/Deputy Chairman. Academic staff salary is increased after every 3 years but for special cases it could take place earlier thanks to academic staff excellent performance. FGAM implement appointment process for all important positions according to requirements from Office of Administration and Personnel [*Exh.6.7: FGAM personnel appointment process*]. Starting from election at each Department for manager positions by each tenure, everyone has the right to nominate oneself or others who are qualified. All policies on job quitting, retirement and social welfares are applied in accordance with Official Laws and Governmental Decrees. [*Exh.6.8: Process of HR development*].

The management responsibility for Faculty Dean/Vice Dean, Department Chairmen are clearly stated in the working position descriptions prescribed by FGAM. Department Chairmen are responsible for assigning teaching load for academic staff according to semester academic calendar and academic staff major. Each course must be handled by at least 2 academic staff in syllabus composition and teaching implementation. Academic staff with real manufacturing experience take priority for practical courses. They must contact with industrial partners who have manufacturing systems relevant to the course contents to provide students with opportunities for internship, site visits, research project or capstone project.

The service workload is assigned to academic staff according to academic staff ability, experience for each activity. Young academic staff are more suitable to support students in activities of Youth Union or Student Association like Postcard design contests, Graphic Art contests. While, prestigious academic staff with skillful communication would help to connect with companies for internships, scholarships... Dean, Vice Dean, Chairmen are responsible for admission consultation. Academic staff with strong research ability are to facilitate students' research.

Academic staff are aware of their responsibilities and accountabilities as described in their contracts with HCMUTE [*Exh.6.9: Work contract and Job description*], Regulations for academic staff [*Exh.6.10: Regulations for academic staff, Decision 2765/QĐ-DHSPKT dated 18 Dec 2018*], and they could be reminded at specific moments when needed, especially for the required annual standard teaching and research hours. Working relations among individuals – others and individuals

– direct managers are clearly stated in job descriptions and frequently expressed in specific common tasks and reports. All academic staff are supervised by Department Chairmen and the Chairmen take responsibilities in front of the Faculty managing board. Faculty Dean supervises all faculty members including the Chairmen and Vice Deans.

For new comers, FGAM always assign advisors who are usually Department Chairmen. Before 2002, the probation lasted in 2 years. However, it is now only 1 year. [*Exh.6.11: Academic staff probation portfolios*]. Academic staff are encouraged to support each other in common activities like seminars, class observation, art performance, sports competitions, etc.

Teaching methods, contents, assessment tools are decided by individual academic staff as long as they are aligned with ELOs and approved by the in-charge Chairman. Academic staff could self-select and promote research projects fitting with the strategy of their Department, Faculty and HCMUTE. All behaviours are self-responsible by academic staff.

6.4. Competences of academic staff are identified and evaluated

All academic staff of FGAM must have competences for scientific research (annual research projects, articles published), pedagogical competences (certificate of pedagogy level 2, minimum level B2 of English language), professional competences from engineer level or higher, technology competences such as IT knowledge, software using skill. Scientific research competences are evaluated based on the annual scientific research work of each lecturer, such as the University level and Ministry level projects, articles published in national or international scientific journals. Pedagogical competences are evaluated through the department report of teaching activity and student assessment results of academic staff's teaching. In addition, the contribution of academic staff in supporting students in learning activities or supporting printing enterprises in improving printing production techniques is also included in the assessment to classify academic staff in the end of academic year.

Requirements for academic staff are stipulated in their work contracts and job descriptions, as well as the Regulations for academic staff. Each academic staff must possess the 2nd-level Pedagogical Certificate and the minimum level of English proficiency of B2.

Particularly, academic staff must be able to develop a complete course from syllabus to assessment methods which could be flexibly applied to achieve CLOs. Teaching equipment may be also required to ensure teaching quality and renovate teaching media. In every course, academic staff must comprehensively self-evaluate for improvement taking into account the feedback from students and other observing colleagues. [*Exh.6.12: Student survey report and Class observation feedback*].

All academic staff take part in the curriculum design, recomposition, assessment or adjustment process, from surveying for feedback from stakeholders to curriculum draft. Problems in teaching methods, contents and assessment methods must be jointly solved by in-charge academic staff teams.

Academic staff are always stimulated to get involved in scientific research projects to work out solutions for urgent problems of companies. It is a requirement that all academic staff have research capability through conducting annual research projects at different levels, publishing SCI/ISI

journal papers. For a Master holder teacher, he or she must fulfill at least 250 equivalent research hours, while this number is 300 for a PhD holder teacher.

Academic staff can cooperate directly with university functional offices to support graduate employment for industrial employers, company visits, admission consultation, etc, or they could even raise and organise contests for students.

FGAM continuously improves competence of academic staff through maintaining fruitful relationships with partners in printing industry, participating in training programme in advanced countries, doing scientific research in cooperation with industry, short-term exchange programme abroad. *[Exh.6.13: MOU with Chulalongkorn University]*.

6.5. Training and developmental needs of academic staff are identified and activities are implemented to fulfil them

Academic staff capability improvement is cared of specially as stated in strategic plans of FGAM and HCMUTE. The implementation of this task appears in the Annual strategic objectives at both University level and Faculty level. FGAM always encourage academic staff to participate in short-term and long-term training courses. FGAM also strongly support academic staff who pursue post-graduate programme, especially PhD-degree programmes. All academic staff are required to join in training workshops on teaching methodology and assessment methodology renovation; IT skills or tool usage; and English proficiency improvement. Joining in such workshops, the academic staff receive full supports such as all the costs are covered by either HCMUTE or FGAM (as shown in **Table 6.7**), workload is reduced, and teaching timetable could be adjusted accordingly *[Exh.6.14: Lecturer handbook]*. The financial supports are a part of the budget that HCMUTE already assigned for academic staff capacity building purpose.

Table 6.7: The training fees in five years

No.	Years	Training fees	Unit
1	2014	926,236,638	VND
2	2015	1,077,318,400	VND
3	2016	1,004,588,438	VND
4	2017	1,182,000,000	VND
5	2018	1,116,000,000	VND

There also exist the policies to support the development of teaching and researching capability of academic staff in ISO procedure for human resource training and development. *[Exh.6.15: ISO procedure for human resource training and development]*. Every year, the Office of General Administration and Personnel (GAPO) asks each Faculty to submit a Request form showing their academic staff desire to take further training, then summarise to develop a common implementation plan for the relevant training courses. *[Exh.6.16: FGAM plan for further training]*. Next, GAPO puts priority on training contents that fit with the missions and objectives of HCMUTE. Nominated academic staff must report their achievements by the end of the training programme *[Exh.6.17: Photos of academic staff achievement reports]*. Finally, FGAM and GAPO will join together to evaluate the results to do better in the coming year.

FGAM also collaborate with other functional offices and printing related industrial partners to facilitate opportunities for academic staff to do internship, approach modern industrial systems to improve their specialised knowledge in both long-term and short-term periods. For short-term activities, usually, academic staff initially raise their needs or topics of interests. The requests will be considered by Faculty managers and University presidential board. For the long-term ones, the training programme are initially planned by Faculty and University and academic staff are encouraged or forced (according to the regulations) to take further training in their majors in order to ensure and leverage a sustainable and academic development for PET field. Academic staff should pursue Master or PhD programmes in their specialised fields to avoid overlaps or mismatches in the human resource frame of FGAM and also to enhance PET programme specifically.

Within the past 5 years, FGAM has got many academic staff pursuing further education programme, for examples:

(1) PhD-degree programme: 01 enrolled in 2013 and graduated in 2017; 01 enrolled in 2014 and is about to complete by the end of 2019, 01 has successfully done the Research plan round in 2017 and is moving into the research phase, and 01 is academically well-prepared and going to defence Research plan round in 2019.

(2) Master-degree programme: 100% academic staff are holding Master degree and heading to PhD-level programmes.

(3) In each year since 2006 till now, FGAM nominates 01 academic staff to participate in printing technology training workshop in Germany (sponsored by Printingpromotion) and till now there have been 07 academic staff trained for at least 1 month in Germany.

(4) HCMUTE organised training courses: Project-Based Learning Workshop from USAID, Design – Build – Test Project Class Implementation from USAID, BUILD-IT, Arizona State University, etc. [*Exh.6.18: Academic staff's certificates of completion*].

6.6. Performance management including rewards and recognition is implemented to motivate and support education, research and service

Since 2016, HCMUTE has applied KPI system [<http://kpis.hcmute.edu.vn>] to evaluate the performance of individuals and units. KPI criteria and indexes are clearly defined and every academic staff must learn how to develop his/her own working plan at the beginning of every semester on the basis of HCMUTE and FGAM plans which have been developed and published on KPI system around a month in advance. Academic staff must fulfill the planning for evaluation. Evaluation results are kept transparent, clear and fair by means of the support from the software.

Academic staff performance evaluation is based on criteria divided into 3 workload groups: teaching, researching and service. In each group, academic staff must indicate their teaching load, research load and service load in accordance with their working positions.

KPI results are used to classify salary increments of academic staff. For those continuously complete their annual loads well, their salary will increase accordingly. Each academic staff could observe and find that his/her salary increments are judged fairly with clear evidences on the system. Also, honourable awards on working performance rewarded by HCMUTE, MoET and Prime Minister are all based on KPI results. In addition, beside the regular salary increment (every 3

years), rapid increment could be considered for academic staff with excellent KPI scores. *[Exh.6.19: Academic staff's working plan, evaluation and KPI results].*

There are various honourable awards to stimulate academic staff performance in teaching, researching and service, such as commendation papers, commendation diplomas, labour medals, progressive an academic staff, academic staff of the year, etc. Moreover, financial awards are also used or come along with the awards such as 20-million VND bonus for an academic staff newly completed PhD degree; bonus and salary rapid increment for newly appointed Associate Professor or Professor Titles. Abnormal bonus could be granted for outstanding activities, for example FGAM received a 5-million VND bonus for successfully organising the 4th ASIA International Conference on Printing Science and Technology in 2012. *[Exh.6.20: Commendation papers and Decision on commendation for the success of FGAM in organising International conference].*

6.7. The types and quantity of research activities by academic staff are established, monitored and benchmarked for improvement

At the beginning of each school year, all Departments work with FGAM to sketch out research plan in relation with previous year statistics, Faculty strategic development orientation and the university common topic of the new school year. Research development plan is then assigned to the in-charge Vice Dean and Department Chairmen through implementation projects with printing companies, publishers, Scientific Departments of Provinces, and Ministries. Research activities always receive good cares from the Office of Science and Technology to ensure the implementation progress. FGAM also have other scientific activities related to scientific conferences, university-industry cooperation, local and international organisations for standards and quality assurance.

There is also ISO procedure for university-level research project implementation and thus, registration for and implementation of such projects are well supervised and assured for progress. Both Faculty and academic staff are following this ISO procedure, regulations on budget limits (annually announced) for every research project. HCMUTE and FGAM emphasise and encourage the university featured projects and projects of young academic staff which usually have high values and are actually put into application in companies after completion.

Featured research activities of FGAM includes: 01 City-level project (done in 2017); 01 Incubation project (on-going); and university-level projects by academic staff. *[Exh.6.21: Academic staff's research projects].*

Table 6.8: Statistics for research project results of FGAM in recent years

School year	Scientific products		Total	Research results per teacher (calculate on 13 academic staff of FGAM)
	Local journals	University-Industry projects		
2013-2014	5	1	6	0.46
2014-2015	0	7	7	0.54
2015-2016	7	6	13	1
2016-2017	3	9	12	0.92

2017-2018	4	10	14	1.08
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Currently, FGAM is not yet able to establish a core research team as expected. However, there are 2 very active academic staff participating in many research projects in design, UV drying system, printing ink manufacturing... FGAM specially focuses on university-industry projects in order to apply immediately research results in real production. *[Exh.6.22: University – Industry projects]*. Normally, FGAM organises National or International scientific conferences every 1 or 2 years, e.g. the 4th ASIA International Conference on Printing Science and Technology in 2012; Printing material conference in 2018; Soft material conference in 2019, G7 standards conference in 2020, and it is planning to organise the 12th ASIA International Conference on Printing Science and Technology. *[Exh.6.23: Pictures of national and international conferences]*.

Since FGAM is currently the only place training Printing Technology in Vietnam, the Faculty finds it impossible to benchmark PET curriculum with similar training programme in other Vietnamese universities. However, graduates from the training programme in information technology, graphic design, and mechatronics are the ones who can also work in PET after some specific additional training. This is also the reason why PET always updates the subjects related to information technology, graphics and emechatronics. Moreover, FGAM is establishing relationship with Faculties in the same field of universities from other neighbour countries, e.g. Thailand, Indonesia and Malaysia to approach the opportunities for benchmarking the programme. *[Exh.6.24: MOU with other foreign partners]*.

7. Support Staff Quality

7.1. Support staff planning (at the library, laboratory, IT facility and student services) is carried out to fulfil the needs for education, research and service

To develop sustainably, HCMUTE periodically create medium-term strategic plans for every 5 years (Medium-term strategic plan 2011-2015, vision to 2020, medium-term strategic plan 2017-2022, vision to 2030) with continued objectives on optimising organisational structure to effectively fit with development strategy and autonomy of the university, developing an active, creative and standardised human resource an IoT based life-long learning supportive environment, a cooperative, professional and modern working environment that maximises the right to work, dedicate and develop of faculty members. In addition, FGAM’s mid-term strategic plan aligns with HCMUTE’s mid-term strategic plan and include detailed objectives of developing supporting staff, e.g. Faculty secretary, technical maintenance staff and laboratory staff. Thus, the staff quantity increases yearly.

Table 7.1: Summary of supporting staff of FGAM and HCMUTE (Reference date: May 02, 2019)

Support staff	Highest Educational Attainment						Total
	High School	College Graduate	Bachelor	Master	Doctoral	Assoc. Prof, PhD	
Library Personnel	2		9	2			13
Laboratory Personnel					1		1

IT Personnel	1	1	3	0	1	0	6
Office of General Administration and Personnel	23	1	9	5	0	0	38
Student Services Personnel	0	0	4	2	0	0	6
Office of Dormitory	9	2	4	2	0	0	17
Office of Project Management	0	0	2	1	0	0	3
Office of Quality Assurance	0	0	2	4	0	1	7
Office of Academic Affairs	0	0	8	3	0	1	12
Office of Finance and Planning	0	1	10	3	0	0	14
Office of Science Technology and International Relations	0	0	5	2	2	2	11
Office of Enterprises Relations	0	0	5	1	0	0	6
Office of Facility Management	0	2	4	2	0	0	8
Office of Academic Inspectorate	0	0	3	2	0	0	5
Office of Equipment and Maintenance	6	0	5	2	0	0	13
Office of Press and Media	0	0	4	2	0	0	6
Office of Admissions and Student Affairs	0	1	5	4	1	0	11
Health Care Center	1	0	1	0	0	0	2
Center of Digital Learning	0	0	2	1	0	0	3
Total	45	11	84	41	4	3	182

In personnel management, together with the increase of faculty member quantity in the whole university, management efficiency improvement and quality performance are focused on through the KPI system [<http://kpis.hcmute.edu.vn>].

Both HCMUTE and FGAM always foster and facilitate academic staff in professional knowledge improvement, e.g. organising annually the Professional leverage examination for supporting staff of functional offices and faculty secretaries in order to enrich their capability and problem solving skills to improve working performance. [*Exh.7.1: Job description for faculty secretary, technical maintenance staff and laboratory staff*].

7.2. Recruitment and selection criteria for appointment, deployment and promotion are determined and communicated

General Administration and Personnel Office (GAPO) yearly collects recruitment demands of all units to develop a recruitment plan. Recruitment information is published on the university website [<http://hrmo.hcmute.edu.vn/>] with detailed steps including Document consideration round; Specialised knowledge testing round; IT and language testing round; interview at Faculty; and announcement for qualified applicants to sign working contracts. [*Exh.7.2: Call for job applications; Recruitment results and Probation contracts*]. The required steps for a recruitment process starts with recruitment planning; plan consideration; recruitment committee establishment; application collecting and sorting; organising examinations for compulsory knowledge; and judgement on the overall results. Next, for qualified applicants, there will be an announcement for recruited applicants who will have to go through a 1-year probation under the assigned advisor's guidance with suitably assigned tasks. After the probation period, a Department-Faculty meeting will be conducted to consider applicant's performance to sign a further contract or not. [*Exh.7.3: Table of task arrangement, Meeting reports, Self-evaluation form with authorities' comments*]. Basing on working performance and experience of the applicants, the Dean assigns tasks to the applicants in accordance with the units' function and responsibility description and job description (attached in recruitment application set) of the to-be-recruited positions.

Moreover, nomination and promotion process for supporting staff (of functional offices) is implemented publicly, democratically and transparently with initial actions of management human resource planning, authorities' recommendations collecting, reliance investigation according to required standards (of professional knowledge, moral characteristics) and process prescribed in the Educational laws and Higher education regulations. After every 3 years, staff's salary will be increased as long as they have successfully fulfilled all given tasks. Special cases of early salary increment may happen if they have awards for outstanding performance. [*Exh.7.4: Regulations for regular and early salary increment for staff*].

7.3. Competences of support staff are identified and evaluated

In probation period, workshop technical staff must have knowledge in printing technology field and work safety. These competences are recruitment criteria and only qualified applicants could be admitted and they are enhanced further within the 1-year probation period. A working contract only comes after they have successfully pass the probation with all necessary competences in hands. Faculty secretaries, in general, are required to be able to compose administrative documents, develop plans, communicate in foreign language(s), use IT tools fluently and manage working time. Each year, the division head evaluate staff's performance and so do students and academic staff for

the services they provide. Functional offices provide supports on other specific tasks as shown in Table 7.2.

Table 7.2: Groups of supporting services

No	Supporting unit	Students services
1	- Office of Academic Affairs	<p>Consulting students with course selection and registration; instructing students how to make study plan for every semester and the whole programme time.</p> <p>Orienting students to learning methodologies and dealing with learning difficulties.</p> <p>Granting credit exemption, examination exemption, course withdrawing, academic transcript.</p> <p>Guiding for graduation management, credit shortage, and other issues related to certificate / degree.</p>
	- Consultants of Faculty	<p>Instructing students to develop study plan.</p> <p>Consulting students with course selection and registration.</p> <p>Orienting students to learning methodologies and dealing with learning difficulties.</p>
	- Science and Technology Management Office	<p>Consulting students with scientific research work.</p> <p>Instructing students how to effectively search for and use learning materials and other library information services.</p>
2	- Admissions and Student Affairs Office	<p>Career orienting, introducing about the university, specialised fields for students.</p>
		<p>Planning and organising career orientation</p>
		<p>Planning for exhibitions to introduce HCMUTE and training programmes to community.</p> <p>Do data statistics on admission work and evaluate efficiency of the admission work and career orientation.</p>
3	- Enterprises Relations Office	<p>Organising Job fairs, Golden week, Employment week on campus, annual conferences/seminars.</p> <p>Cooperating with industrial partners for soft-skill training.</p> <p>Searching for and receiving sponsorships (human resource, equipment, finance) from companies to support students' learning.</p> <p>Organising job consultation, introduction and connect senior students to employers of interests.</p> <p>Developing sustainable collaboration relationship with</p>

		<p>companies for long-term internships or site-visits for students.</p> <p>Organising career orientation clubs, extracurricular activities, exchanges with employers to enrich practical perception of students.</p>
4	<ul style="list-style-type: none"> - Student Service Center - Youth Union - Students' Association 	Daily receiving students and connecting them with consultants.
		Conducting short-term courses for soft-skills.
		Supporting facilities and environment for learning, social activities, charity activities and other outdoor activities.
		Organizing clubs to help students develop their skills and experience.
		Consulting students with social activities and moral conduct score.
		...
5	Science Technology and International Relations Office	<p>Transferring student abroad, looking for and organizing student exchange activities with foreign students.</p> <p>Consulting international students.</p>
6	Library	<p>Periodically organising workshops training students on how to exploit library treasure from the beginning of each school-year.</p> <p>Serving and instructing students in effectively searching and using learning materials and other information sources.</p> <p>Developing appropriate searching engines, automatic searching networks.</p> <p>Supplementing and developing domestic and international information potentials to support teaching, learning, researching and technology transfer purposes</p> <p>Acquiring learning materials published by HCMUTE, approved research reports, conference prints, dissertations, Master/PhD theses of academic staff and students, curricula, textbooks and other material types of the university.</p>
7	Information and Network	<p>Developing online framework supporting online registration, class schedule arrangement, grade management, and so on.</p> <p>The Center for Information and Computers fulfills the daily supports for IT system maintenance, software and</p>

		hardware installation, computer maintenance for offices, internet, and websites throughout the campus.
8	Dormitory	<p>The Dormitory Management board handles accommodation and students' resident stay to ensure safety and convenient living and learning spaces for students.</p> <p>Organising and supervising implementation of civilised living styles in community and developing the Dormitory culture in alignment with standards of Ho Chi Minh City People Committee.</p> <p>Caring about physical and mental lives of resident students.</p> <p>Keeping strictly safety and security in cooperation with police, civil guards to prevent social issues in dormitory.</p>
9	Health Care Center	<p>Protecting, training and caring students and academic staff in health problems.</p> <p>Organising health care activities.</p>

7.4. Training and developmental needs of support staff are identified and activities are implemented to fulfil them

The development process includes: planning and reviewing for approval the plan of human resource development, training implementation, evaluating and storing training portfolios. Moreover, the development could be either top-down or bottom-up process. HCMUTE nominates staff for further training in accordance with its strategic plan and school-year topic. *[Exh.7.5: Evidences for human resource development implementation in HCMUTE]*. On the other hand, should faculty members, who demand to pursue further education in order to be able to fulfill their tasks, could propose their needs to Faculty or University management board for approval. HCMUTE usually support fully tuition fees and transportation fees for off-campus courses. Every year, Faculties work with GAPO to develop a training plan of the year basing on the requests of staff. Such courses includes English improvement, IT, administrative skills/tools for officials and secretaries. *[Exh.7.6: Staff's desires for further learning]*.

Besides, HCMUTE also provides training programme to upgrade staff's degree such as Master-degree training programme for Office managers; ISO 9001:2015 training courses; English improvement for staff on campus or in the Philippines; training courses for Internet application for Press and Media Office; AUN-QA training courses for staff of Office of Quality Assurance. *[Exh.7.7: Evidences for ISO 9001:2015 training courses; training courses on communicative English improvement for staff]*.

7.5. Performance management including rewards and recognition is implemented to motivate and support education, research and service

HCMUTE makes use of the KPI system to evaluate the performance of faculty members [\[http://kpis.hcmute.edu.vn/\]](http://kpis.hcmute.edu.vn/) on teaching, researching and services. The staff at first evaluate

themselves and then the direct managers put their comments/adjustments and the average scores are the final results. *[Exh. 7.8: KPI Evaluation forms; KPI Evaluation results for staff]*.

Staff with good performance results are nominated for early salary increment, awards or even promotion. Basing on KPI results, salary could be either increased or decreased at different levels (Level A is that with the highest salary while Level F is that with the lowest; Level D is considered Satisfactory which means the staff has completed his/her tasks properly). In addition, it is the Level that one could achieve also the basis for consideration for salary increment, awards or promotion. The President annually announce the Staff of the year award together with a certificate and financial bonus to whom has the best performance. Moreover, staff gaining prizes in competitions, contests or being the judges of contests or successfully organising/contributing to institutional/programme assessment activities, scientific conferences, presenting outstanding scientific research results, etc. are all possibly rewarded. *[Exh. 7.9: Commendation decisions]*.

Staff members are always welcome to give feedback on their satisfaction in their work through University general summit (once per year), University key staff meeting/University summer meeting (once per year) or staff surveys done by QAO since 2015 (once per year). Also, HCMUTE accepts feedback through emails, fanpage, mailbox... investigation activities in order to rapidly support or solve problems. *[Exh. 7.10: Communication channels between staff and university management]*.

8. Student Quality and Support

8.1. The student intake policy and the admission criteria are defined, communicated, published, and up-to-date

HCMUTE is conducting various independent and different enrollment methods to find candidates that are suitable for HCMUTE's pedagogical philosophy and training programme at HCMUTE, including:

- ✓ It is the activeness of the university to early cooperate with normal high-schools, gifted schools in Provinces and Ho Chi Minh City
- ✓ Put priority to students with excellent transcripts and admit them directly (5% of the total admission quota), accept directly outstanding students from gifted schools (10% of the total admission quota).
- ✓ Provide full or half scholarships to talented students, those that have gained prizes in National or International Level academic competitions.
- ✓ Give priority also goes to the programme of Pedagogical English (10% of the total admission quota) that students of this programme have 100% tuition fee waived.
- ✓ Offer special bonus to the candidates with the highest entrance score in each field, each 1 grade higher than the cut of entrance score is equivalent to 1 million VND.

HCMUTE annually submits to MoET its admission plan, which after being approved allows the university to implement special policies to attract and admit students basing on their score clusters related to each programme. *[Exh. 8.1: HCMUTE 2019 admission plan]*. Specifically, PET uses the following 4 clusters A00, A01, D01 and D90 to recruit students (A00: Mathematics, Physics,

Chemistry; A01: Mathematics, Physics, English; D01: Mathematics, Literature, English; D90: Mathematics, English, Natural science).

Simultaneously, HCMUTE diversifies its Admission consultation throughout schoolyears on the university website (<http://tuyensinh.hcmute.edu.vn/#/home>), White-night consultation with the President, Online consultation through <http://utetv.hcmute.edu.vn/>, Youtube, Coffee with the President. Also, HCMUTE exploits the formal press and media such as Tuổi trẻ, Thanh niên... to transfer admission information to parents, academic staff and students nationwide.

Another meaningful activity is the Admission Fair, Open Day in every January in which high-school students are invited to HCMUTE for campus tour, further introduction to programmes. In average, 5000 high-school students come to HCMUTE in this way every year. Additionally, HCMUTE also makes use of Alumni channel by assigning our students to their past high-schools to introduce HCMUTE to their past academic staff and juniors. [*Exh. 8.2: Statistics of Open Days and Admission Fair*].

Thanking to the active admission efforts, the enrollment number of students into PET programme is very stable. The number of applications and the number of finally admitted students are shown in **Table 8.1**. The total enrolled for PET is shown in **Table 8.2**.

Table 8.1: Statistics of student quantity for PET

School-year	Batch	Graduation year	Student quantity		
			Applications	Admitted	Enrolled
2018-2019	2018	2022	362	77	59
2017-2018	2017	2021	182	73	69
2016-2017	2016	2020	162	139	103
2015-2016	2015	2019	486	70	71
2014-2015	2014	2018	204	86	61

Table 8.2: Statistics of student quantity currently studying PET

School-year	Student					Total
	Freshmen (1 st year)	Sophomore (2 nd year)	Junior (3 rd year)	Senior (4 th year)	Extended (more than 4 years)	
2018-2019	59	69	85	69	34	316
2017-2018	69	103	64	56	45	293
2016-2017	103	65	57	52	65	277
2015-2016	71	61	54	89	60	275
2014-2015	61	55	90	81	19	287
2013-2014	59	98	85	46	36	288

2012-2013	104	88	48	47	36	287
2011-2012	89	49	53	38	35	229
2010-2011	51	56	39	98	47	291
2009-2010	57	41	99	71	70	338

8.2. The methods and criteria for the selection of students are determined and evaluated

The 1st student admission rule follows the regulations of MoET, admission according to national high school graduation examination scores. A minimum total score is preset for each programme and only applicants with the sum higher than that minimum level could be considered for admission in the top-down principle until the admission quota is reached. The quota for every training programme is publically announced on the university admission website [<http://tuyensinh.hcmute.edu.vn/>]. Applicants can observe the online admission results that are continuously updated on both university admission website and MoET admission website. [Exh. 8.3: Admission information on website].

The 2nd student admission rule, applied since 2015, bases on applicants' high-school transcripts. This rule is used for applicants from gifted schools that closely related to the training programme that they would like to pursue. For example, Mathematics talented applicants are suitable for A01 group of programmes. Contests or outstanding solutions/designs are all qualified for HCMUTE admission. The minimum admission scores of PET in either 1st or 2nd rules are shown in **Table 8.3**.

Table 8.3: Statistics of Admission score levels of FGAM in the last 3 years

School-year	Batch	Graduation year	Admission score level	
			National high school graduation exam scores	Bases on applicants' high-school transcripts
2018-2019	2018	2022	18.6	24.51
2017-2018	2017	2021	22.75	24
2016-2017	2016	2020	21.25	25
2015-2016	2015	2019	29	
2014-2015	2014	2018	18	

In order to update for rapid adjustments, in 2018, HCMUTE developed a dashboard (<http://tuyensinhdss.hcmute.edu.vn/>) to analyse admission statistics for each training programme in accordance with admission rules and GPA of students while studying in HCMUTE, geographic admission statistics (to focus admission consultation effort properly to potential or traditional areas. Figure 8.1 shows the geographic distribution of FGAM admitted students. that the data shows that students of PET are from all the Central regions, Ho Chi Minh City and southern neighbour provinces, and some provinces in the North of Vietnam. [Exh. 8.4: HCMUTE Admission consultation software].

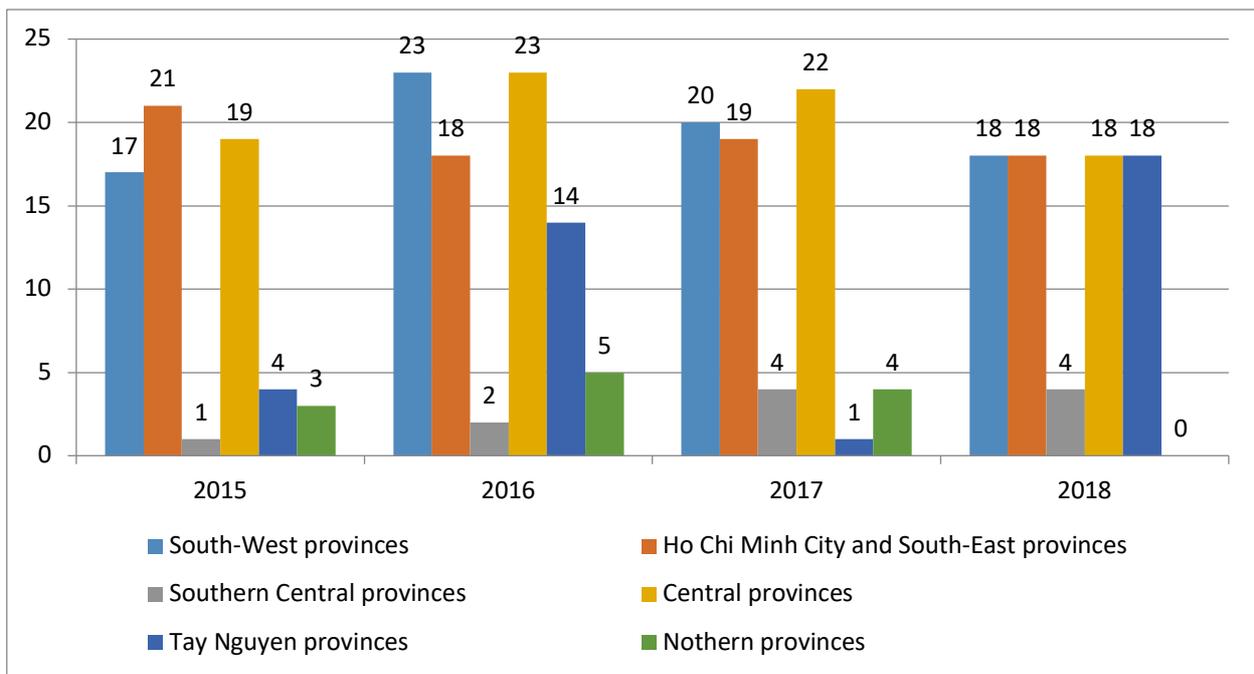


Figure 8.1: FGAM Geographic admission statistics

From this data, HCMUTE accordingly adjusts its admission strategy. The university focused only on A00 cluster before, but now more clusters like A01, D01 and D09 are also considered. Putting more care on English competence and Mathematics of admitted students, HCMUTE accepted applicants with IELTS score from 6.5 and SAT from 800 to enroll in fully-taught-in-English programmes. Graduation outcome of English must be at least or equivalent to TOEIC 550. Students are allowed to take English courses in qualified foreign language centers separately and submit their certificates before a specific date for graduation consideration. HCMUTE strongly facilitates female students in technology and engineering fields. The rate of female students in PET is up to 49.25%, a high rate in technology and engineering programmes as shown in Figure 8.2. *[Exh. 8.1: HCMUTE 2019 admission plan].*

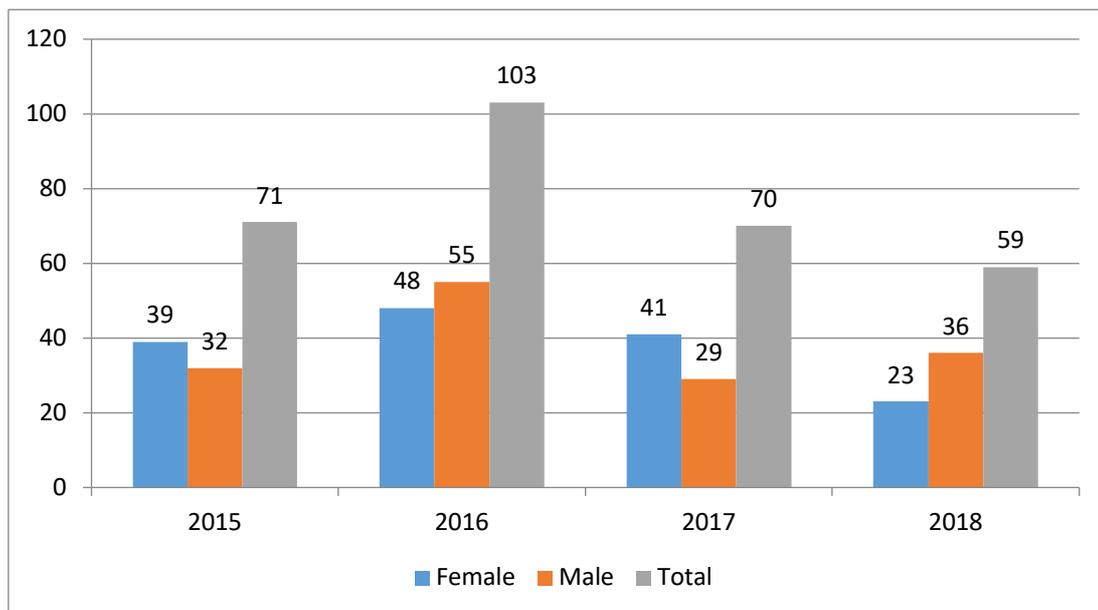


Figure 8.2: Female student rate in PET programme

8.3. There is an adequate monitoring system for student progress, academic performance, and workload

HCMUTE and FGAM use <http://online.hcmute.edu.vn/> to provide information, management, supervision and evaluation for students' progress. This website helps manage students' course scores, cumulative results and warnings when needed.

Right after completing enrollment procedure, each student receives a Student ID and email which could be used to access <http://online.hcmute.edu.vn/>. This personal account allows students to register for courses, receive class schedule, join in LMS courses, receive learning materials, announcements from university, FGAM and teachers, check formative, summative and final results, cumulative results, number of completed credits and GPA. In addition, students fulfill and submit their works for teachers' assessment and share their feedback to HCMUTE and FGAM through this website. *[Exh.8.5: The online website and students' accounts].*

Similarly, each academic staff is also provided with an email address and personal account on <http://online.hcmute.edu.vn/>, through which the academic staff could receive teaching schedule, student lists for his/her classes at the beginning of each semester. Academic staff use their accounts to do head-counting, send messages to students, key in scores, comment on students' works, announce off classes or make-up classes and receive announcements from the university. Teachers' personal email accounts allows academic staff to deploy teaching and learning activities on LMS. *[Exh.8.6: The online website and Teachers' accounts].*

With an academic supervising system, the Office of Admission and Student Affairs (OASA) distributes warnings on students' learning and moral conduct every semester to warn students who are at low performances and FGAM. The Faculty bases on these notifications to appropriately consult each of those students, offer extra-classes if needed (for weak students), support finance (for poor students) and advice students with psychological problems in order to help all students to complete fully ELOs and on time. From 2014-2015, the Office of Academic Affairs (OAA) developed and put into use a dashboard platform <http://dashboard.hcmute.edu.vn/> to supervise academic data system related to students' learning progress and results. Dashboard allows the Dean, Vice Dean to access information such as: total number of students attending, statistics of grades, distribution of students attending by locality. *[Exh.8.7: Dashboard statistics of students' learning progress and results].*

Classes are conducted with supports of students, usually one monitor and 2 vice monitors per class to represent the class. In social activities, representatives of the Youth Union (branch secretary), Student Association of each class will help supervise regulation abundance and effectiveness in social activity implementation. Sports club, Science club, English club... are organised to enrich students' activities. *[Exh.8.8: Club activities].*

Extracurricular/social activities and soft-skills are used to evaluate moral conducts of students in which the minimum requirement is 4 equivalent working days per training programme.

Students complete their study at the average period of 8 semesters (4 years) and at the rate of 47.5%. The rest of students, 52.5%, spend some additional time to solve their problems which are usually shortage of required accumulative course scores; financial difficulties or study methods for higher education. In these cases, FGAM always offer assistance for students such as: open

supplementary classes, soft skills classes, scholarships to overcome difficulties. (Refer to Criterion 11).

8.4. Academic advice, co-curricula activities, student competition, and other student support services are available to improve learning and employability

FGAM consultants support students with career orientation, course selection, study plan or any of their questions. The major part of the consultation team includes academic staff or support staff of functional offices. FGAM organises Faculty-level talks with students to directly collect feedback from and work out problems of students in all aspects of students' life in HCMUTE as above-mentioned in accordance with regulations of HCMUTE and FGAM. [Exh. 8.9: FAQ of FGAM].

All courses have detailed course syllabi and teaching-learning plan, assessment methods and weights of formative scores. Students are able to study through both face to face classes and LMS system. At the end of each semester, FGAM managing board reviews and sorts out courses with abnormal high rate of failure or low score to reconsider assessment methods and teaching process with respect to students' and teachers' feedback on the courses, to find out reasons and solutions for the problems. [Exh. 8.10 Summary results consulting of student evaluation lecturers].

To let students get used to job positions and careers after graduation, the course Introduction to PET provide overall information of the field, typical products, the position of the PET field in social working structure and its linkage in the work map. FGAM also organises conferences and seminars on professional knowledge and soft-skills, e.g. CV writing, information searching, training workshops by industrial partners, technology and machine exhibitions. [Exh.8.11: Soft-skills training courses].

Academic staff also help students in contacting with industrial partners, companies and guide students to visit factories, advice students on major selection, internship places and other necessary procedure to support their internships. [Exh.8.12: Company site-visits guidance]. FGAM usually takes students directly to companies not only for their visits or internships but also for the employment purposes. The Faculty cooperates with industrial partners in probating manager recruitment, Gold (AD), ect.

From students' admission time, they are carefully informed about regulations, policies, assessment, procedure and right to give feedback, health care, orientation in both study and extra-curricular activities in HCMUTE and FGAM, e.g. camping, music performance, connecting with elder students. [Exh.8.13: Student welcome ceremony plan]. On this day, students have opportunities to explore FGAM activities, training programmes, campus tour, meet with FGAM teachers, advisors and places for consultation, training and testing plans and graduation criteria. [Exh.8.14: Admission procedures and process].

Table 8.4: Open day, Golden week and visiting activities

	2017			2018			2019		
	Time	Company Quant.	Student Quant.	Time	Company Quant.	Student Quant.	Time	Company Quant.	Student Quant.
Job fairs	May	47	4995	May	56	4379	May	69	-
Golden	Jan &	55	1778	Jan &	97	3526	Jan	69	1715

week	Aug			Aug					
Connect to success programme	Oct	28	2000	Sep	42	2000	Sep	45	1066
Company site visits	Year round	70	3,956	Year round	85	3950	Year round	108	4.550

FGAM also organises Club for designing to help students experience through contests such as the annual 20th-Nov postcard design contests. English club of FGAM enhances students' communication in English and match them with foreign students from Thailand, Japan... Clubs for skills provide necessary skills in information searching, writing quality (sponsored by FGAM alumni). The Faculty regularly invites alumni to instruct students how to look for scholarships, do great job interview, negotiate salary and share experience... *[Exh.8.11: Soft-skill training courses]*. Scholarships to financially support poor students or to stimulate excellent students are frequently offered. On average, 15 students receive scholarships every year, with the amount increasing year by year (2014: 30 millions VND; 2015: 90 millions VND; 2016: 130 millions VND; 2017: 90 millions VND; 2018: 180 millions VND). *[Exh 8.15: Alumni scholarships to students]*.

8.5. The physical, social and psychological environment is conducive for education and research as well as personal well-being

HCMUTE has a quite large area with open space and many trees. The facility of HCMUTE has been becoming more and more beautiful, clean, green and cool. The campus is divided into sub-zones for different purposes, air-conditioned or ventilated classrooms with LED TV, for instance, auditoria, classrooms, libraries, learning material centers, laboratories, practice workshops, dormitories, canteens, green parks, self-study spaces on basement and the 5th floor of the Center building, compassion corner, stadium and dome yard for gymnastic practice.

HCMUTE has established 2 self-study zones for students on the 5th floor and the basement of the Center Building in addition to many outdoor stone tables distributed all around the campus and study spaces in or next to libraries with computers, electrical plugs and free wifi to facilitate students. Particularly, in FGAM, practice workshops at free time also become study spaces for students. *[Exh 8.16: Self-study zones for students]*.

Through special talks or meetings with famous singers, miss of Vietnam at the University Main Performance Hall, HCMUTE shows its good care to students' entertaining and social demands. Also, internal activities like singing contests, dancing contests, live broadcasting Vietnam U23 Asean Cup football matches, and so on. HCMUTE establishes and supports clubs of different talents: English, skills, martial arts, music, dancing, magic, MC pro, social activity team, Examination aid, Green summer, blood donation, orphan care, Green Sundays... Alumni – student meetings are also held to connect and support students on Alumni's day. *[Exh.8.17: Activities of Groups/Teams/Clubs]*.

HCMUTE ensures the health care, mental consultation for students through the role of the Health Care Center which is responsible for checking health condition of students from enrollment moment; monitoring and providing medicines to students when needed. It also guarantees to buy

annual Health insurance for academic staff and students of the whole university, organises psychological consultation at Center for student services (SSC) through talks, seminars on love, gender, political and social topics... in order to orient students to positive lives. The security guard team works 24/7 to make sure of a great security for students, academic staff and any activities of the university. *[Exh.8.18: Insurance, health care and Psychological consultation for students]*.

9. Facilities and Infrastructure

9.1. The teaching and learning facilities and equipment (lecture halls, classrooms, project rooms, etc.) are adequate and updated to support education and research.

Currently, HCMUTE has 2 campuses with the total area of 21ha in which spaces for auditoria, classrooms, libraries, learning material centers, laboratories, workshops stadium and performance hall occupy 122.243m². With the current number of students, the average rate is 3.95m² per student and it satisfies the requirements for training according to MOET regulations. Besides, the teaching time is 11 teaching hours/day, starting from 7:00am till 5:50pm with a short rest at noon from 11:40am to 12:30am while the classrooms are not yet 100% used.

In addition to the commonly used learning spaces of HCMUTE, FGAM provides a 120m² seminar room serving for theory, practice and project discussion for 20-23 student groups. *[Exh.9.1. Printing workshop layout]*.

Regarding facilities for teaching and researching, HCMUTE has established new or enlarged old classrooms, laboratories and workshops, and equipped them with modern devices/systems. The financial source for such improvement includes that of the governmental supports and that of the university. HCMUTE spends more than 6 billion VND per year for this improvement purpose. *[Exh.9.2. Equipment purchasing plan and Functions of Office of Equipment Management]*. HCMUTE has already spent up to 22 billion VND, to upgrade the internet infrastructure to serve for training (through online training website <https://lms.hcmute.edu.vn>) and for scientific research. Especially in 2019, the university establishes UTE's Online University (<https://utex.hcmute.edu.vn/>) – which is to meet with the requirements of Industry 4.0. *[Exh.9.3. UTE interface]*.

For a sustainable development, HCMUTE develops medium-term plans 2011-2015 (vision to 2020) and medium 2017-2022 (vision to 2030) as the basis for equipment purchasing and investment plans. *[Exh.9.4. HCMUTE development plans]*. Every year, a plan for purchasing and replacing equipment for above-mentioned places is conducted. Sudden needs for amendment can be considered through sudden purchasing procedure.

Since 2015, HCMUTE has done survey on academic staff about working environment and on students about service quality. Results have shown that up to 97.7% is absolutely satisfied and 2.3% is unsatisfied. *[Exh.9.5. Survey and feedback from staffs and students]*.

9.2. The library and its resources are adequate and updated to support education and research

HCMUTE has a library system which contains 2 main zones including A-zone and the basement of Center Building (in use since 07/2019) with total area of 1.430 m². The working time of library is from Monday till Friday: 7:15 – 11:15 in the morning and 13:00 – 17:00 in the afternoon.

In case of the examinations, serving time of library increases even longer to evening to let students find their expected learning materials for examinations.

With a large number of readers, to ensure the availability of reading materials, there are also regulations for time duration and quantity of books that one may borrow as shown in **Table 9.1**.

Table 9.1: Book borrowing regulations

Reader category	Textbooks		Reference books	
	Quantity	Duration	Quantity	Duration
Undergraduates	15 - 20	1 semester	10	3 weeks
Post-graduates	5	8 weeks	5	4 weeks
Faculty members	5	1 year	10	1 year

Reading materials in library are quite various including 358,633 textbooks; 121,406 copies in Vietnamese language; 9,144 copies in foreign language (in High quality library); 11,042 bachelor and master dissertations, reports; 298 copies of quality standards and 137 journals (this number is more and more increasing). Particularly, there are more than 141 materials in printing engineering technology. Also, 20 accounts for online material searching are available for teachers' and students' usage. FGAM itself also possesses a bookshelf in the printing workshop with which PET students may easily find journals, dissertations and other related materials. *[Exh.9.6. Regulation of the library, list textbook of Library and FGAM bookshelf]*.

There are computers, iPads and Wi-Fi network available at the library in order to fully support readers to search for needed materials. Also, the Library offer limited number of spaces for group learning or self-learning including common reading rooms, zones for textbooks and reference books... *[Exh.9.7. Facilities of the library]*. According to the learning material supplement regulations, every year, FGAM works with the library to make a list of required learning materials that are lack of to propose supplement purchase. Thus, the materials are quite up-to-date and match well with the teaching contents of PET.

The Library raises up some special activities to stimulate readers which are exchanging old books to new books, talks or seminars on new materials, online knowledge treasures... *[Exh.9.8. Images of featured activities of Library]*.

Besides, with the objective of comprehensive and continuous improvement, the Library usually conducts surveys on readers' satisfaction. Results show the satisfaction of 81.64% of students and 100% of faculty members. Feedback could also be transferred to the Library directly through talks with students every semester. Every opinion of readers is respected and carefully fulfilled later on to ameliorate service quality of the Library. *[Exh.9.9. Survey questionnaires of Library]*.

9.3. The laboratories and equipment are adequate and updated to support education and research

FGAM current has 02 working offices for teachers, 01 seminar room and laboratory rooms as shown in **Table 9.2**.

Table 9.2: Functional offices of FGAM

No.	Laboratory room	Quantity	Function
1	Computer to Plate Lab	1	Practice on prepress process with CTP machine, modern workflow software... which were invested in 2009
2	Printing Material Lab	1	Practice on printing materials: papers, inks... with measuring equipment which is annually invested and calibrated.
3	Plate Exposure Lab	1	Practice on workflow plate exposure: plate machine for offset In 2018, FGAM collaborated with Meiwa company to install an environment friendly Flexo plate making machine.
4	Colour Management Lab	1	Practice on proofing printer and colour management process with spectrophotometer equipment, profile making and proofing.
5	Studio Room	1	Practice taking pictures and image processing
6	Offset Printing Lab	1	Offset printing practice
7	Digital Printing Lab	1	Practice digital printing method with HP Indigo Press 5000
8	Packaging Lab	1	Practice on design and manufacturing of paper packaging
9	Postpress Lab		Practice on finishing process: folding, cutting of books, magazine....

PET students are required to practice in all these Labs during their training programme according to the curriculum. Each Lab is monitored by 1 technical staff who is in charge of teaching material preparation, maintenance, problem fixing... for all the equipment. Particularly, an additional staff is assigned for Printing material Lab to make sure the very expensive equipment must be calibrated and used properly. *[Exh.9.10. Job description for task assignment]*.

At the end of each school-year, FGAM will make a report on equipment usage efficiency, i.e. frequency of use, Lab diary... to Office of Equipment Management (EMO). Academic staff for practice together with technical staff double-check all equipment status and propose amendment or maintenance accordingly using the annual financial supports from HCMUTE. *[Exh.9.11. Report on equipment usage efficiency and simple amendment]*.

9.4. The IT facilities including e-learning infrastructure are adequate and updated to support education and research

To catch up with the development in IT, HCMUTE equips 1,512 internet-connected computers for all units and 258 projectors or large-size LCD screens in the campus. *[Exh.9.12. Statistics of computers and projectors of EMO]*.

Moreover, a PSC software is widely use in the whole campus to monitor academic tasks, test grading, property management, library management, personnel management, surveying, data storage and management... of HCMUTE effectively. Every academic staff or student is given one personal account in the university domain (@hcmute.edu.vn và @student.hcmute.edu.vn) to exchange information and communication. Through website-based tool [\[http://eoffice.hcmute.edu.vn\]](http://eoffice.hcmute.edu.vn), faculty members can find important internal information. Students can do course registration, acquire grades, examination schedule, academic information on the same page or [\[https://dkmh.hcmute.edu.vn\]](https://dkmh.hcmute.edu.vn), download learning materials on [\[http://thuvienso.hcmute.edu.vn\]](http://thuvienso.hcmute.edu.vn), take online courses on [\[https://lms.hcmute.edu.vn\]](https://lms.hcmute.edu.vn), and utilise MOOCS of UTEEx on [\[https://utex.hcmute.edu.vn\]](https://utex.hcmute.edu.vn). In addition, FGAM has its own website [\[http://fgam.hcmute.edu.vn\]](http://fgam.hcmute.edu.vn) through which students could find information of curriculum, syllabi, regulations, scholarships, teachers' CVs and research fields and employment. *[Exh.9.13. Interface of PSC management software and website]*

To increase efficiency and quality of training programme, HCMUTE invested 300,000 USD for Digital Learning Center (DLC) and more than 160 billion VND for UTEEx online university model.

- ✓ DLC is a cooperation between HCMUTE and HEEAP Alliance, ASU, Intel and Pearson. Currently, it consists of 7 working groups each of which is equipped with modern online learning facilitating devices for totally 50 people. The devices make it possible to connect with any foreign universities (e.g. ASU in the U.S.A.) to conduct E/M Learning, Blended Learning. Till now, there have been 8,370 lectures done by academic staff and posted on internet.
- ✓ UTEEx is a model of unviersity applying modern teaching techniques and advanced designs; aiming at developing educational ecology, creating an open resource, intelligent educational network (university-industry-community); inheritting and utilising advantages of Industry 4.0 (AI, Big Data, AR/VR, 3D...); developing eClass model with multi-bases of Web, Mobile...; optimising personal learning environment (PLE) and diversifying assessment methods.

To enhance online learning programmes, wifi is available at the Center building, High-tech center, outdoor self-learning spaces, student service spaces for all academic staff and students. HCMUTE manages wifi access by email of students and faculty members. FGAM actively install wifi for all practice workshops, seminar rooms and learning spaces around the workshops to support students' and teachers' activities.

9.5. The standards for environment, health and safety; and access for people with special needs are defined and implemented

HCMUTE applies good health care policy with full medical insurance, self-paid accident insurance and annual health examinations at recognised medical centers for faculty members.

It is also the duty of the Health Care Center and Student Service Center to guarantee students' and teachers' insurances, consult psychological and medical insurance matters, prevent or cure academic staff and students, inform or advise directly every Thursday, and provide FQA on health problems, school medical information through emails.

Food hygiene and safety are at the highest priority of HCMUTE with regular inspections conducted at the students' and teachers' canteens. Work safety in practice workshops and laboratories is also highly emphasized. All workshops and laboratories must have their own regulations on safety, danger warning, first-aid boxes, and fire extinguishers installed around the spaces. Students are trained with safety firstly before any further practice. Safety is one of students' assessment criteria. The HCMUTE security team has totally 22 guards to look after properties and security of the whole campus, remind academic staff and students with regulations, and handle illegal activities. The guards are assigned with specific tasks and circulate with each other to be on duty for 24/24. Security cameras are installed to enhance security, exist signs and hotline phone numbers are attached all around the campus for emergency cases. *[Exh.9.14. Guards' responsibilities and regulations]*.

10. Quality Enhancement

10.1. Stakeholders' needs and feedback serve as input to curriculum design and development

Established since 1987 from the demands of PET in Vietnam, FGAM has got 32 years of continuous development and become the only institution for PET training at the South of Vietnam. The very first student batch in 1987 had only 22 students and until now there are 80 students per batch in average. It proves that FGAM is getting along well with the ever-increasing development of the printing and packaging fields in Vietnam. Up till 2018, FGAM had contributed more 2,000 engineers for the field throughout the nation with a great fit to the needs in the society. The Decision on establishment of FGAM of HCMUTE was issued by Ministry of Education and Training (MoET) which is officially legal. And orientation instructions in curriculum development based on the standard frame of MoET. *[Exh.10.1: Decision on establishment of FGAM]*.

The curriculum development process was constructed on the foundation of real needs achieved through labour market surveys, local economic demands, vision and mission of HCMUTE and FGAM, opinion contribution from experts, industry, alumni, last year students and teachers. All the data collected from multi-stakeholders were carefully considered and approved by the FGAM-level and HCMUTE-level scientific committees. *[Exh.10.2: Newly developing or adjusting curriculum procedure]*. All construction and adjustment work for curriculum must follow strictly HCMUTE regulations. Accordingly, the curriculum is periodically assessed after every 2 years and adjusted within every 4 to 6 years.

The data collection activities include:

- ✓ Faculty-level conferences on curriculum development, expected learning outcomes... in alignment with technological requirements, industrial partners' evaluation, comments on knowledge, skills and attitudes of graduates. *[Exh 10.3: Scientific conference on curriculum development]*.
- ✓ Annual FGAM Alumni meetings in which alumni exchange with academic staff their thoughts on the curriculum, their current working positions, employment demands, or necessary skills of graduates in printing technology nowadays. How do graduates meet with the requirements of companies is a hot question in the survey. *[Exh 10.4: FGAM Alumni meeting]*.
- ✓ Talks between FGAM management board with students in the middle of each semester to

discuss on the current curriculum and advice the future career development trends in the future and thus, work out the necessary modification in the curriculum. *[Exh 10.5: FGAM periodical talks with students]*.

HCMUTE developed all curricula with the PDCA cycle. At the beginning stage of curriculum development, surveys are conducted with industrial partners (through direct meetings, emails, survey form distribution in conferences or talks), teachers, experts (through meetings at Faculty level or Department level), students (through their evaluation on academic staff of each course, meetings with Faculty members or consulting team). Newly graduated students are surveyed right before their commencement and degree awarding. Alumni are asked for feedback through emails, online surveying forms, or annual direct meetings). Noted feedbacks and respective changes are listed in **Table 10.1** below. The questionnaire contents of Stakeholder feedback surveys are upgraded and changed every year. *[Exh.10.6: Inputs & feedback of stakeholders for the curriculum development]*.

Table 10.1: Stakeholders’ surveyed feedback

Stakeholders	Feedback	Improvement methods
Industrial partners	Insufficient working skills	Further instruct and practice teamwork skills through increasing presentations in team in courses
	Weak communicative skills, confidence in interviews and presentations	Organise extra-curricular classes for skills, interview skills, negotiation skills either by FGAM, Student association or Youth union.
	Inarticulate communication in professional English	Increase the use of English learning materials in specialised courses, such as textbooks, reference books and lecture slides.
	Low performance of professional working skill	Increase more company site-visits, internships, courses given in company, self-study time to 6-10 weeks and stimulate students with self-experience in summers.
	Weak entrepreneurship and doing-business skills	Increase extra training courses on management, start-ups, idea development which are emerged in the 132-credit curriculum ELO13 and ELO14.
Alumni	Low information-searching skill	Organise training workshops for information searching, analysing, report writing and presentation.
Teachers	Low ability of self-study, inappropriate study plan and time management	Create more self-study spaces, provide more materials, instruction of information searching and filtering.
	Need-to-be-improved communication skills	Conduct more extra-courses for communication skills

Students	Inarticulate communication in professional English	Conduct more extra-courses for skills and organise English clubs
	Lack of awareness and respect regulations of companies and the internship length	Do more internships, joint-projects with companies, part-time jobs in companies in summer time. Increase graduation internship to 10 weeks.

10.2. The curriculum design and development process is established and subjected to evaluation and enhancement

HCMUTE relies on ISO procedure for curriculum construction and assessment with the following main steps: Planning for curriculum composition; Implement curriculum composition; or Evaluating the composition process with PDCA circle. On receiving the formal request from HCMUTE, FGAM management board developed PET curriculum and then conducted a meeting of Faculty Scientific committee to get comments for improvement. As soon as being approved by the committee, the curriculum was disseminated to stakeholders. At this stage, stakeholders' feedback was collected to develop ELOs, adjust course contents accordingly, create teaching-learning plan... The Scientific committee kept meeting to review and approve the pre-final curriculum. Finally, all stakeholders gathered in a large scale meeting to obtain the final and most satisfactory version. This final version will be reviewed after the next two years and significant changed after 4 or 6 years. However, while putting the curriculum in application, FGAM could adjust up to 5-7% of the total contents whenever needed to fit better with reality. *[Exh.10.2: Newly developing or adjusting curriculum procedure]*.

The FGAM Scientific committee takes responsibility for considering and finalising the following issues: Orienting for curriculum development; Deciding to develop new or amend existing curriculum annually; Deciding on ELOs; Review survey questionnaires and results; Selecting courses for the curriculum together with their roles and contributions to ELOs of the programme; Arranging courses into semesters.

The 132-credit programme that FGAM developed in 2018 includes the following kernel changes as shown in **Table 10.2**.

Table 10.2: Comparison among 184-credit curriculum (2008), 150-credit curriculum (2012) and 132-credit curriculum (2018) of PET programme

Contents	184-credit curriculum (2008)	150-credit curriculum (2012)	132-credit curriculum (2018)
Conduct Introduction to PET course	No	Yes	Yes
Enhance soft-skills and English competence	No	Yes	Yes Lecture slides in English
Increase number of project-based courses from 2 to 6	02 projects	06 projects	06 projects 100% students fulfill

courses			capstone projects
Develop rubric matrices for Labs, workshops, internships, project courses, capstone project	No	Yes	Yes
Invite industrial representatives to join in the defence committee	No	Yes	Yes Industrial representatives to join in the defense committee
Allow students to take cross-disciplinary courses for 6 credits	No	No	Yes
Accept MOOC certificates	No	No	Yes
Arrange at least 1 course taught by industrial experts	No	Yes	Yes
Prolong internship period	4 – 6 weeks	4- 6 weeks	10 – 15 weeks

Also, PET programme was developed with reference to advanced curricula of other worldwide recognised universities to both catch up with international level of the field and meet with the demands of the national market.

FGAM Scientific committee, Management board and academic staff are all in charge of curriculum implementation including developing teaching plan (theory, practice and laboratory) of school-years and semesters, arranging academic staff for courses, collaborating with Office of Academic Affairs for courses registration and timetables for students, investigating and assessing the curriculum. *[Exh.10.7: Procedures of assuring teaching and learning quality]*.

10.3. The teaching and learning processes and student assessment are continuously reviewed and evaluated to ensure their relevance and alignment

HCMUTE has a clear monitoring process for teaching, learning and assessing. At the beginning of each school-year, the university announce the academic schedule of the year basing on which FGAM cooperate with Office of Academic Affairs to develop teaching plan and class observation plan for each semester. At the middle of each semester, the Faculty and Departments prepare examination schedule and inform teachers, students and Office of Academic Inspectorate about venue and time arrangement for the exams. *[Exh.10.7: Procedures of assuring teaching and learning quality]*.. Teaching portfolio, examination questionnaire composition, duplication and security must follow ISO procedure and fit well with course CLOs and approved by Department chairmen. To ensure fairness in examination according to the ISO procedure, there must be at least 2 examiners in each examination room, or 3 examiners for the room with 50 students, to double check student IDs and one outdoor inspector. Academic staff must hand in their teaching portfolios by the end of each semester to their Department for consideration.

PET programme concentrates on technology to offer students the early chance to take part in the labour market during their studying time; puts priority for laboratory courses, workshops and projects to support students' working readiness; enhances teaching and assessing communication

skills, report writing, presentation, teamwork, brainstorming in product design and development. [\[Refer.8.11: Soft-skills training courses\]](#).

For instance, the course Printing Technology Projects in the past focused mainly on theory and report writing but now is conducted in the Project-based learning model with requirements for student to experience practice first to come up with real topics for their project, work in team, make report and be assessed by their final prototype products. Another example is the course Offset Printing Technology was put in the 7th semester (before 2015) as a theoretical course and succeeded with Practice 1,2,3 in the 8th semester before the graduation internship. From 2016, although the course was still put in the 7th semester, its Practice 1 and 2 were also put in the same semester for students to immediately apply theory into practice. Students spend up the 8th semester for Practice 3 and graduation internship in company sites. [\[Exh.10.8: Lecturer portfolio\]](#).

FGAM requires that the teaching portfolios include textbooks, reference books, lectures, course syllabus, class schedule, learning instruction, assessment methods, comments of students and teachers. Class observation, peer-consultation are also meaningful contribution to teaching quality improvement.

HCMUTE and FGAM have created a vast space for academic staff to innovate in their teaching job. They are stimulated to apply the most modern and effective methods utilising IoT tools, Project-based learning model in their courses. Students are required to report, present individually or in team, do internships and courses in companies, take LMS courses with uploaded materials, lectures and assessment method description. [\[Exh.10.9: Internship and site-visit reports\]](#).

Assessment in each subject has many forms. Currently the process evaluation is spread throughout the semester and accounts for an average of 50%. The forms of assessment are also diverse with different structures. These include: a quick classroom test to reinforce or evaluate a content, through short questions, a minute paper quiz, using LMS or Quiz software (10%), a test in class (exam) assessed from one or several criteria of the subject's output standards (10%), Homework (10%) and a necessary condition, to be allowed to take the final exams, articles presentation reports (20-30%), projects throughout the semester (20-30%), multiple choice test (30%), essay test (20%). Implement some regulations such as: paralysis, when the midterm / final score is less than 3, the final score of the subject, even if it is greater than 5, still fails, the regulation on attendance, not absent more than 3 times. [\[Exh.10.10: Improvement in the Teaching and Learning activities\]](#).

Instead of evaluating with a written exam, all projects and presentations are now evaluated by Rubrics: Rubrics is built for subject assessment forms such as Projects for Graphic Arts, Prepress Projects, Printing Technology Projects, Post-Press Processing Projects and are informed to students at the beginning of the course.

Grading is done for each answer sentence in the exam (refer to Exh 10.5) Questions of tests are designed according to QR to specify the number of questions corresponding to each output standard. Multiple choice tests are designed according to Bloom scale. The answer of each test is published on the FGAM website. [\[Exh.10.11: Improvement in Courses assessment activities\]](#).

All information on contents, assessment methods, examination formats, ... are clearly mentioned in the course syllabi and also by academic staff to students at the beginning of the courses and on LMS.

10.4. Research output is used to enhance teaching and learning

Scientific research results are put into teaching contents to improve the teaching quality. Flexibility in practice courses and software courses are applied. Research results in technological solutions such as Colour management, Process Calibration, Novel materials in packaging are all put into lectures to upgrade teaching contents approaching reality.

Other scientific research results are also utilised off-campus, such as standards for professional level, product quality control process, standardised training programme for PET workers, and technology transfers to industry. *[Exh.10.12: Application of scientific research results in teaching]*.

10.5. Quality of support services and facilities (at the library, laboratory, IT facility and student services) is subjected to evaluation and enhancement

Student supporting services are evaluated every year for improvement basing on students' comments on their satisfactory (through surveys, direct meeting and feedback on facebook...) on competence and attitude of support staff, restrooms, gyms, parking areas, study rooms, libraries, dormitories, computer rooms, internet, canteens... Survey results of 2018 tells that 79,52% students are satisfied with the services (20,48% no comment), 71.25% are fine with HCMUTE facilities (28.75% no comment) and 78,6% are fine with students services (31.4% no comment). *[Exh.10.13: Survey results on student supporting service quality]*.

Each semester, HCMUTE and FGAM organise at least 1 meeting with students on academic affairs, tuition fee, curriculum, facility, social activity principles, internship, services... in order to ameliorate the quality. *[Exh 10.5: FGAM periodical talks with students]*.

After collecting and evaluating the feedbacks, from 2018, all theoretical rooms are upgraded with LED TV to replace projectors, air-conditioners to provide cool temperature classrooms in HCMUTE, especially for hot weather. Digital learning center supports students to study online and self-study. E-library lets users access for material exploration, open-source courses, 20 accounts of the National Center for Science and Technology to support deep searching for academic staff and featured research groups. FGAM itself upgrades the testing machines and supporting equipment for teaching. *[Exh.10.14: Libraries and services for students]*.

Since 2016, the university has invested in constructing F1 building for practice in which there are 8 stories and 1 roof-top zone to facilitate training activities and research space for experts. In October 2016, the self-study spaces on 5th floor and basement of the Center building were constructed and put into use from September 2017.

Established in 2013, the Student Service Center (SSC) aims at supporting students' study, part-time jobs, entertainment, physical education, living skills and psychological consultation. Free Wi-Fi is available at the center building, self-study spaces, libraries, dormitories and SSC.

In recent years, the library has expanded the self-study areas in the basement of the Central Building. High Quality Library with an area of 1,500m², campus covered with wifi, 100% air conditioning in addition to the valuable foreign-language document repository with over 7,843 reading materials in place and a capacity of nearly 500 seats. The reading room in zone A is equipped with 15 tablets and 15 computers connected to wifi. Most recently, all the reading room and the self-study room at Zone A Library have been air-conditioned. The reading room service is also opened throughout the noon. Around the library are self-study areas located under green trees.

In connection to the company, HCMUTE's Career Center helps with additional supports for students in advising for career orientation, job application preparation, soft-skill training and connecting students with employers. HCMUTE offers a space for businesses to open offices at the University campus to interact with students, introduce the company and recruit suitable candidates. The Career Center also updates information, career trends, organizes or introduces seminars on personal development and entrepreneurship. *[Exh.10.15: HCMUTE Career center]*.

10.6. The stakeholders' feedback mechanisms are systematic and subjected to evaluation and enhancement

HCMUTE applies an ISO procedure to collect and analyse stakeholders' feedback through online surveys including:

- ✓ Investigation on the quality of all university's services to students once per year in every January to improve facilities and services. *[Exh.10.13: Survey results on student supporting service quality]*.
- ✓ Investigation on teaching quality through students twice per year in the middle of each semester (every May and November) to improve teachers' teaching activities. *[Exh.10.16: Student online feedback forms and reports for teaching quality]*.
- ✓ Investigation on newly graduated students (3 months from their graduation) twice per year in May and November in their commencements to evaluate their employability and adaptability of training programmes with real requirements of society. *[Exh 10.17: Survey results on students three months after graduation]*.
- ✓ Investigation on alumni once per year on Alumni's Traditional Day to obtain valuable and precise comments from alumni about the needed modification in curriculum to improve employability. *[Exh 10.18: Survey results on Alumni]*.
- ✓ Investigation on faculty members' satisfaction on working environment, current work loads, promotion, special treatments in every November. *[Exh: 10.19 Survey results on faculty members' satisfaction on working environment]*
- ✓ Investigation on industrial partners once per year to upgrade curriculum, facilities of FGAM and HCMUTE to meet with their expectations.

The survey mechanisms of HCMUTE have experienced significant changes within the last decade. Before 2012, paper-based surveys were used and focused mainly on students' satisfaction on study and life. From the 2nd semester of 2013-2014 school year, online surveys were used. Basing on the collected survey results, the university requests all units to develop improvement plan and report with evidences of implementation in PDCA circles.

11. Output

11.1. The pass rates and dropout rates are established, monitored and benchmarked for improvement

Before 2014, the quantity of graduates was provided to the Faculty by Office of Academic Affairs, Office of Admission and Student Affairs by year end through emails. From 2014, the process was improved with supports from DASHBOARD software to monitor and react more rapidly and precisely *[<http://dashboard.hcmute.edu.vn/>]*. The operation and data management process is as

following: in the beginning of each school-year, FGAM issues the expected graduation rate. The Vice Dean in charge of academic affairs is authorised to monitor and manage data of student graduation/quitting status in each semester. At the end of the school-year, FGAM compares the actual graduation quantity informed by Dashboard and analyses the result to figure out problems and their relevant solutions for improvement. **Table 11.1** shows collected data from 2010 to 2018 on students' on-time/late graduation rate and quitting rate.

Table 11.1: Statistics on students' pass and dropout status of FGAM

Academic Year	Cohort Size	% complete first degree in			% dropout during			
		< 4 years	4 years	> 4 years	1 year	2 years	3 years	≥ 4 years
2017-2018	69	-	-	-	1,45	-	-	-
2016-2017	103	-	-	-	-	17,48	-	-
2015-2016	71	-	-	-	-	1,41	1,41	-
2014-2015	61	0	36,07	27,87	-	6,56	1,64	-
2013-2014	59	0	59,32	22,03	6,78	1,69	3,39	-
2012-2013	104	0	16,35	53,85	5,77	7,69	0,96	9,62
2011-2012	89	0	31,46	48,31	1,12	3,37	4,49	8,99
2010-2011	51	0	80,39	5,88	3,92	1,96	3,92	3,93

The data show that before 2014 the quitting rate varied unexpectedly and increasingly, e.g. 2011 (8,99%), 2012 (9,62%). However, from 2014, quitting only happens in 2nd year and varies no more than 5% yearly. Particularly from 2013 on the drop-out rate is 0%.

Students quit studying due to many reasons, such as being unable to catch up with the knowledge flow of the programme, being unable to afford tuition fee, psychological problems, etc. Accordingly, FGAM has offered the following solutions:

For students with financial problems: FGAM make use of supports from industrial partners, alumni and off-campus training incomes to offer scholarships to poor students. On the other hand, HCMUTE also offers supportive scholarships. *[Exh.11.1: Financial supports for students]*.

For students with difficulty following up with studying, being unable to get used to studying methods in undergraduate level, lacking of information of professional field, lacking of cumulative scores... the consultation team will talk to students directly in their offices, on phone, email and other social media tools... Besides, on the Open-days, there are also assigned academic staff to meet with and introduce to high-school students about the major, the Faculty and future career. *[Exh.11.2: Open-day activities]*. At the beginning of each school-year, FGAM organises the Initiation Ceremony for freshmen to get them familiar with the new environment as soon as possible, connecting them to the faculty, elder students for the best supports for their upcoming studying lives. *[Exh.11.3: Initiation ceremony activities]*.

It could be seen from **Table 11.2** that the average graduation rate is 77.62%. Since 2016, the rate has been continuously higher than preset values. This is a great evidence for the effective on-track improvement solutions of FGAM.

Table 11.2: Graduation rate per year from 2012 to 2017

School year	2013-2014	2014-2015	2015-2016	2016-2017	2016-2017	Average
Expected rate (%)	80	80	80	80	80	80
Real rate (%)	81,36	70,19	79,78	86,27	84,21	77,62

11.2. The average time to graduate is established, monitored and benchmarked for improvement

PET programme is designed for a 4-year period. However, students are able to finish early in less than 4 years by taking in advance more courses or prolong to a maximum of 8 years. The actual average graduation time of PET students is 4.5 to 5 years.

Basing on the students' cumulative transcripts, discussion results between faculty members and students, FGAM has found out some key factors influencing students' graduation period as shown in **Table 11.3**.

Table 11.3: Reasons and solutions to improve students' study duration

No	Reasons	Solutions	Improving activities
1	Students could not pass General knowledge courses due to being unable to catch up with undergraduate learning methods and self-study. <i>[Exh.11.4: Learning consultation for students]</i>	Youth Union branch of FGAM supports students with learning experience.	Connect students of different batches to exchange learning experience.
		Organise additional summer courses for General knowledge courses.	Let students make use of summer time to complete General knowledge courses and shorten their study time.
2	Students could not pass specialised courses	Consultation team guides students with suitable learning schedule	Instruct students with more effective learning methods
		Adjust methods for formative assessment with more big or small assignments.	Guide students to adjust their learning process
		Organise additional specialised courses beside the official schedule.	Help students to save time and offer more chance to take exams for courses and thus qualify graduation conditions early.
3	Students face financial	Introduce part-time jobs at	Offer students the chance to

	problems and cannot afford tuition fees and living expenses or spend too much time for part-time jobs. <i>[Exh.11.5: Part-time jobs for students]</i>	companies for students through FGAM fanpage.	approach real tasks, practice in printing process during studying time to gain working experience before graduation.
		Offer students with teaching assistance job.	Only students with GPA higher or equal to 7.0 could take this job. It offers students additional incomes, knowledge revision requirements, experience exchange.
		Award scholarships of Industry, University and Alumni to students.	Partly solve financial problems for students during their study time.
		Student Service Center usually post part-time job employment information for students	Such solutions are meaningful for students with low GPA to flexibly arrange their time to work.
4	Students face difficulties in affection, psychology and city life. <i>[Exh.11.6: Psychological consultation for students]</i>	Student Service Center always have psychological experts to advice students	Support to let students feel comfortable to pursue studying
		University-level and Faculty-level Youth Union organise art performance, sports or contests for students.	Connect students not only internally in FGAM but also out of FGAM to other faculties
5	Students are seduced by social issues, online games... and distracted from learning	HCMUTE organizes talk shows, meetings, and skill clubs to help students perceive and avoid social issues.	Positively changing students behaviours and perception

11.3. Employability of graduates is established, monitored and benchmarked for improvement

Office of Quality Assurance (QAO) conducts surveys on students after their graduation about curriculum and their employability by the time they receive their formal Bachelor degree. Next, QAO creates a report to submit to Presidential board and Faculties or related offices to jointly solve existing problems. *[Exh.11.7: Statistics on employment of students after graduation]*. Survey results on time that PET students needed to find a job after graduation within 2014-2018 are in **Table 11.6**.

Table 11.4: Time needed to find a job after graduation in September (2014-2018)

Time needed to find 1 st job (%)	Graduation year					Average
	2014	2015	2016	2017	2018	
Before or by graduation day	52,5	75	52,9	61,4	60	60,36
One month after graduation day	15	16,7	17,6	9,1	23,3	16,34
Three months after graduation day	10	0	5,9	9,1	3,3	5,66
Still looking for a job after 3 months	7,5	8,3	11,8	6,8	10	8,88
Do not look for a job but other plans	15	0	11,8	13,6	3,3	8,74

The results reveal that a quite high rate (60,36%) of newly graduated students obtain their job. This is in fact the certain efficiency of activities connecting students with employers conducted by ERO from early stage, self-preparation for knowledge and skills of students, continuous updates of employment information on online channels of FGAM. On the other hand, the labour market of PET field is in such a period that demand prevails supply. Foreign companies are increasingly investing into Vietnam with recruitment strategies to attract students such as employing after internships, further training after graduation to enlist into their young staff teams... by CCL, Avery Dennison and so on. [*Exh.11.8: Supporting activities for student employment*].

Some parameters, e.g. additional training time from employers, alignment between students' major and their jobs, students' satisfaction on their job..., are also considered as reflectors of quality of PET training programme (Table 11.5).

Table 11.5: Characteristics of jobs that students obtain within 3 months after graduation

Job characteristics (%)	Graduation year					Average
	2014	2015	2016	2017	2018	
Aligned with students' major	96,8	100	92,6	100	96,2	97,12
Needed additional training from employers for less than 3 months	76,2	72,7	38,5	40	30,8	51,64
Satisfied with the job	60	95,5	92,3	85,7	84,6	83,62

Up to 97.12% of students are working with the jobs in their major field and 83.62% of students satisfy with what they have to do in their jobs. Additional training time is significant reducing by 45.4%, from 76.2% (in 2014) to 30.8% (in 2018). That means the knowledge students learned from the training programme is more and more approaching to the knowledge needed for real work and getting students to meet early with employers (job fairs, golden weeks...), on-site practice (site-visits, internships, part-time jobs...) is the correct action to do.

11.4. The types and quantity of research activities by students are established, monitored and benchmarked for improvement

In order to support students in scientific research development, FGAM usually organises contests for students on- or off-campus. Capstone projects are done in the manner of doing scientific research.

Beside Postcard design contest on the occasion of Vietnamese Teachers' Day and Spring-card design contest which are tradition competitions among FGAM students, the Faculty also cooperated with Lan Vy Paper Company to organise Confetti Creative Awards (CCA) in 2016, with Student Association to organise Being skillful – Sustainable career contest in 2018, and supported students to participate in CCA 2018, Adobe Certified Associate World Championship – ACAWC 2019 organised by IGG. The number of FGAM students doing capstone projects instead of taking graduation examination is increasing with higher and higher quality. *[Exh.11.9: Academic and scientific contests]*. Products of project courses, multi-course projects are also evidence for students' ability to link knowledge to solve a specific problem with new solutions. *[Exh.11.10: Students' products of project courses and capstone projects]*. In 2019, HCMUTE supported 763 million (0.21% of total income) to support students' research activities and contests. *[Exh.11.11: Table of Financial supports for students' research]*.

11.5. The satisfaction levels of stakeholders are established, monitored and benchmarked for improvement

For students, the surveys for their satisfaction on training contents, facilities, services, utilities... are conducted during the time they receive they register for graduation degrees. During studying time, students could share comments on teaching quality, methods, and assessment requirements... by course-end surveys. Academic staff review the feedback to improve the quality in the next semester. Students are also invited to attend meetings, talks with Faculty management board to share their concerns about facilities, major selection, supports for studying process... which are organised every semester. Problems related to university and offices are share by FGAM to Office of Admission and Student Affairs and then to offices. Students may talk directly to the President on the last Thursday of every month for urgent matters or reflect issues through social networks like Facebook, Zalo..., and emails. Specially, starting from the 2nd semester of 2015-2016 school year, students and parents may share opinions to universities from home through online systems. *[Exh.11.12: Survey on students' satisfaction during studying]*.

Table 11.6. Students' feedback on services provided by HCMUTE

Contents	2016	2017	2018
Satisfaction on Competence and Attitudes of faculty members	78,15%	79,40%	79,52%
Satisfaction on Service facilities of university	72,61%	72,59%	71,25%
Satisfaction on Service quality of university	76,18%	77,87%	78,60%

For academic staff and other faculty members, QAO conducts annual surveys on working environment, treatment policy, salary, promotion opportunities, and supports from functional offices... to evaluate their satisfaction to the university. The annual staff meeting is also another chance for academic staff and staff to contribute their ideas into document drafts, orientations of the universities. The meeting is conducted from Faculty-level and then the Faculty nominates representatives to participate in the University-level one. *[Exh.11.13: Survey on staff' satisfaction]*.

Table 11.7: Feedback of faculty members on working conditions

Contents	2016	2017	2018
Satisfaction on salary and bonus	86,43%	89,36%	91,19%
Satisfaction on treatment policy and working requirements	83,68%	83,53%	86,93%
Satisfaction on opportunities for professional training and promotion	81,45%	85,15%	90,05%
Satisfaction on direct management board	84,54%	88,30%	91,38%
Satisfaction on colleagues	93,58%	93,75%	94.05%
Satisfaction on working environment	96%	96%	97,70%

For industrial partners, Office of Enterprise Relations (ERO) regularly conducts Job fairs, Golden weeks... Particularly, FGAM also conducts regular investigation on students working readiness during site-visits, meetings, internships, emails... in order to obtain the satisfaction of industrial partners on working ability of graduates and also problems that need to be solved. *[Exh.11.14: Survey on Industrial partners' satisfaction]*.

For alumni, the Faculty organizes the annual Alumni meeting in every November to meet, exchange and collect feedback to upgrade amelioration. *[Exh.11.15: Survey on alumni's satisfaction]*. Table 11.8 shows some typical feedback of industrial partners and alumni.

Table 11.8: Feedback from Industrial partners and alumni on lacking skills of graduates

No	Feedback from Industry and Alumni	Improvement done by FGAM
1	Students need actual working skills (ELO 4.2)	Increase workshop practice, on-site practice and internship time of students through: <ul style="list-style-type: none"> • Organising site-visits for students. • Increasing internship time from 4 weeks to 8-10 weeks (the whole 7th semester). • Doing on-site practice in 2-3 weeks. • Offering students with practice jobs in printing workshop. • Encouraging students to participate in professional conferences or exhibitions.
2	Students need communicative English (ELO 3.2)	Increase English requirement standards for graduation. Establish and maintain English clubs activities. <i>[Exh.11.16: English improvement activities for students]</i>
3	Students should study in multi-disciplinary programmes, not single disciplinary ones (ELO	Allow students to select theoretical courses in their needs.

	4.1)	
4	Students lack problem solving skills (ELO 2.1)	<p>Put project courses into curriculum, guide students to apply transferred knowledge to solve the project tasks. Students practice problem solving skills during project implementation.</p> <p>In some workshop courses such as Post-press practice, Practice for special printing technology in which students are required to create products, students must apply their knowledge learned from other courses, e.g. Pre-press, printing and product finishing to fulfill the requirements .</p>
5	Students have low teamwork, communication ability, especially document-based communication (ELO 3.1)	<p>Increase teamwork in 132-credit programme.</p> <p>Invite experts to train students writing skills.</p>

PART III: STRENGTHS AND WEAKNESSES ANALYSIS

1. Criterion 1: Expected Learning Outcomes

Strengths

- ELOs of PET tightly follow regulations of MoET and reflect visions, missions of HCMUTE and FGAM.
- ELOs of PET programme are fully included and contributed in courses and extra-activities. Course contents are compatible with CLOs and CLOs are compatible with ELOs.
- ELOs of PET are clearly stated and classified into 4 knowledge clusters which are general knowledge, professional knowledge, general skills and professional skills to ensure that students adapt well with their jobs as well as obtain a firm knowledge base for life-long learning.
- ELOs of PET reflect requirements of all stakeholders since they are developed on the basis of survey results on stakeholders' needs. They are also publicly announced on FGAM websites and many other means.

Weaknesses and Plans for improvement

- Surveys for stakeholders' feedback usually face difficulties, e.g. long time consuming to receive answers. To solve this problem, HCMUTE changed from paper-based surveys into online surveys for more simplicity and comfortability for stakeholders.

2. Criterion 2: Programme Specification

Strengths

- Information of PET including that of every course is clearly stated, regularly updated and publicly announced on FGAM website, through the course of Introduction to PET... to allow students review and select easily.
- PET curriculum and course syllabi provide information on about teaching-learning and assessment methods that help students know how to follow up well with good achievements of knowledge, skills and attitudes.

Weaknesses and Plans for improvement

- Publishing the English version of PET curriculum on FGAM website takes much time for translation task. HCMUTE offers support for translation work and has established PMO to support publishing task.

3. Criterion 3: Programme Structure and Content

Strengths

- PET curriculum structure is constructed logically and systematically with integration of both knowledge and soft-skills.
- PET curriculum structure is balanced among general knowledge, fundamental professional knowledge and advanced professional knowledge.

- PET curriculum is designed flexibly with which students may take cross-disciplinary courses and online courses of other internationally famous universities.

Weaknesses and Plans for improvement

- PET curriculum put quite much time in practice courses and internships causing FGAM difficulties in finding enough companies to cooperate and send students to. To get through the problem, HCMUTE has established ERO to help connecting with industrial partners.

4. Criterion 4: Teaching and Learning Approach

Strengths

- The educational philosophy of HCMUTE, “Humanity – Innovation - Integration”, is expressed in FGAM quality policy and teaching-learning spirit in PET programme.
- Possessing the advantages that HCMUTE is a technology university and also a member of many big international projects, e.g. HEEAP, VULII, USAID-COMET, BUILD-IT, for higher education innovation, academic staff of FGAM have been applying advanced teaching and learning methods to effectively transfer PET knowledge and necessary skills.
- Available advanced equipment and software for PET in combination with digital teaching techniques (e.g. E/M learning, MOOC courses) are supporting significantly the teaching-learning strategy in PET.
- FGAM is the unique PET training institution thus the adjustment to fit with stakeholders’ demands is quite flexible.
- Experience achieved from Major Prepress/Printing/ Post-press Practices and Workshop Practices, as well as internships help students obtain updated knowledge and soft-skills for PET engineers.
- Learning infrastructure and open spaces with supportive facilities are stimulating well self-study and life-long learning of students.

Weaknesses and Plans for improvement

- English Communication capability and specialised competence of students are quite limited. HCMUTE is pushing establishment of English language centers to support students.
- Some teaching materials are quite out-of-date. FGAM has been approved to invest a project on Offset printing technology which is expected to complete in 2019.

5. Criterion 5: Student Assessment

Strengths

- Quality of input students is very stable because FGAM is the unique PET training institution in the South of Vietnam.
- FGAM applies almost all assessment methods such as diagnostic, formative and summative. Rubrics are used to assess project courses and capstone project.
- FGAM assess students on the basis of CLOs to improve further the curriculum quality.

Weaknesses and Plans for improvement

- Assessment for Soft-skills is still qualitative and needs to be replaced by more precise methods.

6. Criterion 6: Academic Staff Quality

Strengths

- Most of academic staff have practical experience working in printing companies before and expertise in the courses they are in charge of.
- More than 50% of the academic staff have been professionally trained in Germany, one of the best countries in printing technology in the world.
- All academic staff are capable to self-update technologies and adjust teaching methods to adapt with the modern requirements.
- All academic staff are able to use teaching supportive software/website to upload videos, teaching materials...

Weaknesses and Plans for improvement

- None of academic staff has got Associate Professor Title. HCMUTE and FGAM very much appreciate and encourage academic staff to achieve such title.
- Unable to recruit PhD holding teachers. HCMUTE on one hand stimulates academic staff to pursue PhD programmes and on the other hand recruit newly graduated students to study PhD programmes in the neighbour countries.
- Lack of specialised experimental equipment that could leverage teachers' teaching and researching. FGAM increases cooperation with industrial companies to let academic staff work with modern equipment of the field.

7. Criterion 7: Support Staff Quality

Strengths

- The quality of supporting activities of staff is continuously improved by means of students' feedback. Moreover, KPI system is applied to improve their performance
- In academic, social, physical activities, students' feedback are timely responded by FGAM supportive staff.

Weaknesses and Plans for improvement

- English competence of supportive staff is quite low. HCMUTE is offering staff with English training programmes on campus or abroad (The Philippines).

8. Criterion 8: Student Quality and Support

Strengths

- Student resources come from the whole country and are selected early from highschool through official or special admission processes. FGAM offers many scholarships to students.

- HCMUTE implements many plans and policies to attract students to ensure the quality of input students, uses many media means to disseminate information about admission policy, quota, methods...
- Admission procedures and processes during learning in HCMUTE of students are well planned and implemented according to HCMUTE regulations.
- Regularly organising Open-days to orient and consult high-school students with favourite majors and future careers.
- Academic staff and staff are friendly. Supportive services are highly effective to facilitate students in life, learning, researching or career orientation.
- Many social activities, skill clubs are organised to enrich students' social understanding, personality and dedicating spirit.

Weaknesses and Plans for improvement

- Wi-Fi is not yet 100% available on campus and strong enough to use LMS and E-learning tools. HCMUTE is planning for receiving sponsorship or free Wi-Fi from Google.
- Number of students per class is still high and thus it is difficult to apply active teaching-learning methods. The F1-building will soon be put into use to reduce this load.
- Students come from various places with big differences in English proficiency, learning and perceiving competence. It takes them a period of time to adapt with the new life in the city studying undergraduate level. Student service center is strongly supporting students to overcome difficulties. The project of Foreign language center which is about to run will help improve English competence of students.

9. Criterion 9: Facilities and Infrastructure

Strengths

- Workshops and Laboratories of FGAM are equipped with good equipment to help students practice printing work and process.
- FGAM also receives supports from companies to let students practice on real and modern printing systems.
- HCMUTE has strong IT system to support teaching and learning like LMS, UTEx to utilise the most modern teaching methodologies.

Weaknesses and Plans for improvement

- Too many students in a practical class leading to difficulty in arranging lab/workshop schedule. Once any equipment is down, the schedule is seriously affected. HCMUTE supports rapid maintenance team but fixing time is still not short enough.
- Wi-Fi system is not stable to support learning and researching of academic staff and students. HCMUTE is cooperating with Google to fully cover Wi-Fi around campus.

10. Criterion 10: Quality Enhancement

Strengths

- PET programme is reliable since it is constructed with reference to similar training programmes which are from reliable information sources such as real production requirements, stakeholders' feedback and regularly upgraded.
- PET programme is constructed with reference to similar training programmes which are from esteemed universities in the world.
- Processes of HCMUTE and FGAM on curriculum development, teaching, assessing are all following ISO.
- All courses have teaching portfolios, syllabi, learning instruction, LMS, E-learning , dashboard to orient and monitor teaching – learning process..
- Academic staff utilise advanced teaching techniques obtained from international projects like HEEAP, BUID-IT for training quality improvement, such as Project base Learning, Work based Learning.
- Self-learning spaces and learning equipment have been gradually upgraded in the recent years.
- FGAM students' and teachers' satisfaction is frequently investigated and improved every semester.

Weaknesses and Plans for improvement

- Scientific results are still fewer than FGAM potential. The Faculty is enhancing joint research with companies to exploit industrial partners' supports to improve the results.

11. Criterion 11: Output

Strengths

- HCMUTE has the Dashboard software to manage student data, rapidly upgrades student information to support effective data analysis. Training quality is well monitored, reflected and continuously adjusted to further improve.
- Employability of graduated students is high, especially more 85% are working in correct major. Adaptability of students to work is also increasing.
- Good cooperation relationship with many printing companies, co-organisation for many working skill contests, professional knowledge contests letting students gain various experience.

Weaknesses and Plans for improvement

- Soft-skills related directly to work such as: communication, time management, leadership, professional working skills are not yet well-equipped for studentd. English competence of students is not yet qualified with requirements of companies. Scientific research activities of students are not strong. In 2019-2020 school year, FGAM will emerge necessary soft-skills into teaching contents of courses, organise additional soft-skill training courses, more contests, club activities for students. Also, the Faculty will hold talk shows on jobs, innovation, start-ups for students. Scientific research club will be established together with innovation contests.

PART IV: APPENDICES

Appendix 1: Checklist for AUN Quality Assessment at Programme Level

1	Expected Learning Outcomes	1	2	3	4	5	6	7
1.1	The expected learning outcomes have been clearly formulated and aligned with the vision and mission of the university						√	
1.2	The expected learning outcomes cover both subject specific and generic (i.e. transferable) learning outcomes					√		
1.3	The expected learning outcomes clearly reflect the requirements of the stakeholders						√	
	Overall opinion	6.0						
2	Programme Specification	1	2	3	4	5	6	7
2.1	The information in the programme specification is comprehensive and up-to-date						√	
2.2	The information in the course specification is comprehensive and up-to-date					√		
2.3	The programme and course specifications are communicated and made available to the stakeholders					√		
	Overall opinion	5.0						
3	Programme Structure and Content	1	2	3	4	5	6	7
3.1	The curriculum is designed based on constructive alignment with the expected learning outcomes					√		
3.2	The contribution made by each course to achieve the expected learning outcomes is clear						√	
3.3	The curriculum is logically structured, sequenced, integrated and up-to-date					√		
	Overall opinion	5.0						
4	Teaching and Learning Approach	1	2	3	4	5	6	7
4.1	The educational philosophy is well articulated and communicated to all stakeholders					√		
4.2	Teaching and learning activities are constructively aligned to the achievement of the expected learning outcomes					√		
4.3	Teaching and learning activities enhance lifelong learning						√	
	Overall opinion	5.0						
5	Student Assessment	1	2	3	4	5	6	7
5.1	The student assessment is constructively aligned to the achievement of the expected learning outcomes					√		
5.2	The student assessments including timelines, methods, regulations, weight distribution, rubrics and grading are explicit and communicated to students					√		
5.3	Methods including assessment rubrics and marking schemes are used to ensure validity, reliability and fairness of students assessment						√	
5.4	Feedback of student assessment is timely and helps to improve					√		

	learning							
5.5	Student have ready access to appeal procedure					√		
	Overall opinion	5.0						
6	Academic staff quality	1	2	3	4	5	6	7
6.1	Academic staff planning (considering succession, promotion, re-deployment, termination, and retirement) is carried out to fulfil the needs for education, research and service					√		
6.2	Staff-to-student ratio and workload are measured and monitored to improve the quality of education, research and service						√	
6.3	Recruitment and selection criteria including ethics and academic freedom for appointment, deployment and promotion are determined and communicated					√		
6.4	Competences of academic staff are identified and evaluated					√		
6.5	Training and developmental needs of academic staff are identified and activities are implemented to fulfil them					√		
6.6	Performance management including rewards and recognition is implemented to motivate and support education, research and service						√	
6.7	The types and quantity of research activities by academic staff are established, monitored and benchmarked for improvement						√	
	Overall opinion	5.0						
7	Support Staff Quality	1	2	3	4	5	6	7
7.1	Support staff planning (at the library, laboratory, IT facility and student services) is carried out to fulfil the needs for education, research and service						√	
7.2	Recruitment and selection criteria for appointment, deployment and promotion are determined and communicated						√	
7.3	Competences of support staff are identified and evaluated					√		
7.4	Training and developmental needs of support staff are identified and activities are implemented to fulfil them					√		
7.5	Performance management including rewards and recognition is implemented to motivate and support education, research and service					√		
	Overall opinion	5.0						
8	Student Quality and Support	1	2	3	4	5	6	7
8.1	The student intake policy and the admission criteria are defined, communicated, published, and up-to-date						√	
8.2	The methods and criteria for the selection of students are determined and evaluated						√	
8.3	There is an adequate monitoring system for student progress, academic performance, and workload						√	
8.4	Academic advice, co-curricular activities, student competition, and other student support services are available to improve learning and employability					√		

8.5	The physical, social and psychological environment is conducive for education and research as well as personal well-being						√	
	Overall opinion	6.0						
9	Facilities and Infrastructure	1	2	3	4	5	6	7
9.1	The teaching and learning facilities and equipment (lecture halls, classrooms, project rooms, etc.) are adequate and updated to support education and research						√	
9.2	The library and its resources are adequate and updated to support education and research					√		
9.3	The laboratories and equipment are adequate and updated to support education and research					√		
9.4	The IT facilities including e-learning infrastructure are adequate and updated to support education and research					√		
9.5	The standards for environment, health and safety; and access for people with special needs are defined and implemented					√		
	Overall opinion	5.0						
10	Quality Enhancement	1	2	3	4	5	6	7
10.1	Stakeholders' needs and feedback serve as input to curriculum design and development					√		
10.2	The curriculum design and development process is established and subjected to evaluation and enhancement					√		
10.3	The teaching and learning processes and student assessment are continuously reviewed and evaluated to ensure their relevance and alignment				√			
10.4	Research output is used to enhance teaching and learning				√			
10.5	Quality of support services and facilities (at the library, laboratory, IT facility and student services) is subjected to evaluation and enhancement					√		
10.6	The stakeholders' feedback mechanisms are systematic and subjected to evaluation and enhancement						√	
	Overall opinion	5.0						
11	Output	1	2	3	4	5	6	7
11.1	The pass rates and dropout rates are established, monitored and benchmarked for improvement					√		
11.2	The average time to graduate is established, monitored and benchmarked for improvement.						√	
11.3	Employability of graduates is established, monitored and benchmarked for improvement.						√	
11.4	The types and quantity of research activities by students are established, monitored and benchmarked for improvement					√		
11.5	The satisfaction levels of stakeholders are established, monitored and benchmarked for improvement						√	
	Overall opinion	6.0						
	Overall verdict	5.3						

Appendix 2: PET programme specification

UNDERGRADUATE TRAINING CURRICULUM

Programme title: PRINTING ENGINEERING TECHNOLOGY

Level: UNDERGRADUATE

Major: PRINTING ENGINEERING TECHNOLOGY

Code: 7510801

Programme type: REGULAR

Degree: ENGINEER

(As promulgated in Decision No.1273/QĐ-ĐHSPKT dated 03rd August 2018 by President of Ho Chi Minh City University of Technology and Education)

1. Study period: 4 years

2. Prospective students: Qualified high-school students who meet the conditions under the plan of the HCMUTE

3. Grade scale, Training process, Graduation condition

Grade scale: 10

Training procedure: Pursuing Regulations for Regular Higher Education Credit-based training programme promulgated in Decision No. 17/VBHN-BGDĐT

Graduation conditions:

General condition: Pursuing Regulations for Regular Higher Education Credit-based training programme promulgated in Decision No. 17/VBHN-BGDĐT

Specialised condition: None

4. Objectives and Outcomes

Goals:

To train students to become engineers in the field of Printing Engineering Technology (PET) equipped with general knowledge, fundamental and specialised (PET) knowledge; ability to analyse, work out problems, evaluate technological solutions; ability to establish and manage printing company, good communication and teamwork skills, relevant attitudes and manners to requirements of the field and society. PET students can work for domestic and international printing companies and PET training centers

Objectives:

Graduated students have knowledge, skills and competence to:

1. Apply social science, natural science, fundamental and specialized knowledge to develop future career and life-long learning.
2. Analyse and offer relevant solutions for problems of printing systems with problem solving and professional skills.
3. Communicate effectively in professional environment, practice leadership and work in team
4. Create ideas, design, implement and operate PET systems

5. Innovate and do business in PET field.

Programme Outcomes:

Symbol	Outcomes	Competence level
ELO1.1	Be able to apply natural, social scientific principles, Information technology in career development and life-long learning.	3
ELO1.2	Be able to apply fundamental knowledge in PET.	3
ELO1.3	Be able to apply advanced knowledge in analyzing technology, technique, aesthetics and management of print production process.	4
ELO2.1	Be able to analyse, summarise, generalize problems and solutions in PET.	5
ELO2.2	Be able to test in printing from sampling to implementation, measurement and evaluation hypothesis.	5
ELO2.3	Be able to identify and analyse a PET system in terms of equipment, manufacturing process and quality control.	4
ELO3.1	Be able to organise tasks and work in team effectively to solve professional problems.	3
ELO3.2	Be able to communicate effectively in various methods.	3
ELO3.3	Enhance ability of using English in printing.	3
ELO4.1	Be able to perform good profession ethics, self-disciplines, industrial manners and self-learning spirit.	4
ELO4.2	Be able to evaluate responsibilities of working positions and the links among positions.	5
ELO4.3	Be able to conceive, design, implement, operate print production process.	6
ELO5.1	Be able to manage a PET company	3
ELO5.2	Be able to do business in PET	3

Competence level scale

Competence level		Brief description
0.0 to 1.0	Fundamental	Remember: Students are able to remember/recognise/recall knowledge through defining, restating, listing, recognising, identifying...
1.0 to 2.0	Qualified	Understand: Students are able to build up knowledge from

		learning materials and other knowledge through explaining, categorising, illustrating, inferring...
2.0 to 3.0		Apply: Students are able to execute/apply knowledge to create products such as samples, demonstrating objects, simulation, reports...
3.0 to 4.0	Proficient	Analyse: Students are able to break materials/knowledge into pieces/parts and point out the relations among them through analysing, distinguishing, comparing, summarising...
4.0 to 5.0		Evaluate: Students are able to apprise, predict knowledge/information according to standards, criteria and identifying factors such as comments, feedback, proposals...
5.0 to 6.0	Expert	Create: Students create/assemble/organise/design/generalise details/parts in another/new way to generate new models/products

5. Total knowledge amount of the program: 132 credits (excluding courses in Physical Training and National defence)

6. Teaching and learning method: Method of teaching toward making learners get knowledge by their own experience under the guidance of academic staffs. Teaching methods also enhance the ability of lifelong learning by providing students the knowledge, skills and attitudes. Through the learning process, students are stimulated to discover themselves and take the learning activities as a tool to implement their own aspirations and then serve community.

7. Student assessment method: Students assessment in each course includes the formative assessment and summative assessment with the weight 50% for the formative assessment and 50% for the summative assessment. The formative assessment is performed several times during the course and with many different methods. The summative assessment is usually held at the end of the course to measure the learning outcomes of students. The forms of assessment include: presentations, homework, exercises in class, multiple-choice questions, questions and questions online, essay, tests in the laboratory, group exercises and project.

8. Course distribution:

NO.	COURSE NAME	Credit no.
	GENERAL KNOWLEDGE	46
	A. Compulsary courses	34
	I. Political Science and Laws	12

1	Fundamental Principles Of Lenin-Maxism	5
2	Revolutionary Strategy Of Vietnam Communist Party	3
3	Ho Chi Minh's Ideology	2
4	General Laws	2
II. Mathematics and Natural Sciences		19
1	Mathematics 1	3
2	Mathematics 2	3
3	Applied Statistics	3
4	Physics 1	3
5	Physics 2	3
6	Experiment Physics 1	1
7	Engineering Chemistry	3
III. Introduction to Printing Engineering technology		3 (2+1)
B. Elective courses		12
IV. Information technology		3
1	Information Technology For Engineers	3(2+1)
V. Social sciences and Humanities (as offered)		4
VI. Mathematics and Natural Science		5
1	Physical chemistry in printing industry	3
2	Organic Chemistry	2
VII. Others		0
C. Physical Training and National defence courses		
VIII. Physical Training		
1	Physical Training 1	1
2	Physical Training 2	1
3	<i>(Elective) Physical Training 3</i>	3
IX. National defence		165 units
SPECIALIZED KNOWLEDGE		86
Cross-disciplinary and basic courses		60
Fundamental courses		
Specialised courses		

Experiment, Practice, Internships	17
Graduation internship	2
Capstone project	7

9. Curriculum contents (titles and credit numbers of compulsory courses)

A – Compulsory courses:

9.1. General knowledge:

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	LLCT150105	Fundamental Principles of Lenin-Maxism	5	
2.	LLCT120314	Ho Chi Minh's Ideology	2	LLCT150105
3.	LLCT120314	Revolutionary Strategy of Vietnam Communist Party	3	LLCT120314
4.	GELA220405	General Laws	2	
5.	INPR130155	Introduction to PET	3(2+1)	
6.	MATH130101	Mathematics 1	3	
7.	MATH130102	Mathematics 2	3	MATH132401
8.	MATH132901	Applied Statistics	3	MATH132501
9.	PHYS120102	Physics 1	3	MATH132401
10.	PHYS120202	Physics 2	3	PHYS130902
11.	PHYS110302	Practice for Physics 1	1	PHYS130902
12.	GCHE130103	Engineering Chemistry	3	
Total			34	

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	PHED110513	Physical Training 1	1	
2.	PHED110613	Physical Training 2	1	
3.	PHED230715	Physical Training 3	3	
4.	-	National Defence Training	165 hours	

9.2. Knowledge of professional education

9.2.1. Cross-disciplinary and basic courses:

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	ENDR130123	Technical Drawing 1	3	
2.	CONE230156	Computer and Computer Network	3	
3.	MEPR230455	Mechanic and Electric Of Equipment Printing	3	PRTE330555
4.	GEPR230255	General Printing	3(2+1)	
5.	CTRE230256	Theory of Colour and Reproduction in Printing Technology	3	GEPR230255
6.	SEMM330755	Safety and Equipment Familiarization	3	
7.	ENGR330356	English for Graphic Arts	3	GEPR230255
8.	PRMA230257	Printing Materials	3(2+1)	GEPR230255
9.	LAPM210357	Printing Material Practice and Laboratory	1	PRMA230257
Total			25(23+2)	

9.2.2.a Fundamental courses (for Theory and Experiment courses)

No.	Course code	Course title	Credit no.	Prerequisites' codes
<i>Advanced courses...</i>				
1.	GRDE330456	Graphic Design	3	PRIP310956
2.	PRGD310556	Project for Graphic Arts	1	GRDE330456
3.	DIIM330656	Digital Image Processing	3(2+1)	GEPR230255
4.	PLMA330756	Technology of Plate Making	3(2+1)	GEPR230255
5.	PRPR310856	Prepress Projects	1	GEPR230255
6.	PRTE330555	Printing Technology	3	GEPR230255
7.	PRJP310655	Printing Technology Projects	1	PRTE330555
8.	POPR330457	Post Press Processing	3	GEPR230255
9.	PRPO310457	Post Press Technology Projects	1	POPR330457
10.	PRMA330657	Economics & Organization Print Production	3(2+1)	GEPR230255
11.	PRPM310757	Economics & Organization print	1	PRMA330657

		production Projects		
12.	PRQM330855	Printing Quality Management	3	PRTE330555
13.	PPQM310955	Print Quality Management Projects	1	PRQM330855
14.		Leadership and Entrepreneurship development	2	
Total			29(26+3)	

9.2.2.b Specialised courses (for Workshop, Practice, Internships)

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	PRIP310956	Practice for Image Processing	1	GEPR230255
2.	PRCG311056	Practice for Computer Graphic	1	GEPR230255
3.	PRLT311156	Practice for Electronic Page Layout	1	GEPR230255
4.	PRPM311456	Practice for Plate Making	1	PLMA330756
5.	PRPA311256	Practice for Digital Preflight Analysis	1	GEPR230255
6.	PDPF310857	Practice for structural design	1	GEPR230255
7.	PRDI311356	Practice for Digital Imposition	1	GEPR230255
8.	PROP321055	Offset Printing Practice	2	PRTE330555
9.	PRPP320957	Post Press Practice	2	POPR330457
Total			11	

Graduation course (*Students to select to either do Capstone Project or take Hands-on courses for 7 credits*)

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	THES471955	Capstone project	7	Pass the “Qualified exam”

Condition to do Capstone Project: Pass the “Qualified exam”

B – Elective:

General knowledge:

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	MPRE130156	Matlab Application in Printing Technolgoy	3(2+1)	MATH132401
2.	OCHE226903	Organic Chemistry	2	GCHE130603
3.	PHCH130157	Physical Chemistry in Printing Industry	3	GCHE130603

Total	8	
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Social science and Humanities: 4 credits (Students to choose 2 out of following courses):

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	GEEC220105	Fundamental Economics	2	
2.	IQMA220205	Introduction to Quality Management	2	
3.	INMA220305	Introduction to Management	2	
4.	INLO220405	Introduction to Logic	2	
5.	CSVH230338	Basic Vietnamese Culture	2	
6.	INSO321005	Introduction to Socialism	2	
7.	ENPS220591	Engineering Psychology	2	
8.	SYTH220491	System Thinking	2	
9.	LESK120190	Learning Skills	2	
10.	PLSK120290	Planning Skills	2	
11.	WOPS120390	Teamworking in Engineering Environment	2	
12.	REME320690	Research Methodology	2	

Professional knowledge: (Students to choose 2 out of the following courses):

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	DPRF431556	Digital Preflight Analysis	3	DIIM330656
2.	COMA431756	Colour Management	3	CTRE230256
3.	OFPR431255	Offset Printing Technology	3	PRTE330555
4.	PAPR431355	Packaging Printing Technology	3	PRTE330555
5.	CDPF431257	Structural Design and Packaging Finishing	3	POPR330457
6.	VAAD421057	Book Binding and Value Added Printing	3	POPR330457

Specialised knowledge: (Students to choose one of the following 3 practical directions - credits):

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	MPPP421856	Major Practice for Prepress 1	3	DPRF431556
2.	MPPP431956	Major Practice for Prepress 2	3	COMA431756
3.	WSPP422156	Workshop Practice Prepress	2	DPRF431556

4.	MPPR421555	Major Practice for Press 1	3	PAPR431355
5.	MPPR431655	Major Practice for Press 2	3	OFPR431255
6.	WSPR421855	Workshop Practice Press	2	PAPR431355
7.	MPPO421357	Major Practice for Post Press 1	3	CDPF431257
8.	MPPO431457	Major Practice for Post Press 2	3	VAAD421057
9.	WSPO421657	Workshop Practice Post Press	2	CDPF431257

C – Cross-disciplinary courses:

- Students are allowed to take 6 credits for cross-disciplinary courses (in or out of the Faculty of Printing and Media) to replace the same credit numbers of specialised knowledge elective courses

- Students may refer to the below list of offered courses or they can even take courses excluded in the list as long as the courses they take supports their future career. In such cases, students should consult with advisors for a relevant selection.

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	BRDE434056	Design 3 (Graphic Design and Branding)	3(1+2)	
2.	PADE434156	Design 5 (Graphic Design and Branding)	3(1+2)	
3.	ETDR336429	Electric Drives	3	
4.	AUCO330329	Automatic Control	3	

D - The MOOC (Massive Open Online courses):

To facilitate students with opportunities to approach advanced training programme globally, students are allowed to take some Online courses offered in the below list to transfer the credits to replace the equivalent courses in curriculum:

No.	Course code	Course title	Credit no.	Prerequisites' codes
1.	PHCH130157	Physical Chemistry in Printing Industry	3	[https://www.coursera.org/learn/physical-chemistry.]
2.	COMA431756	Colour Management	3	[http://connect.idealliance.org/g7/education/colortrainingcmp]
3.	CONE230156	Computer and Computer Networking	3	[https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-829-computer-networks-fall-2002/index.htm]

E – Industry courses: There are 2 credits in the curriculum for seminar reports/presentations from industrial experts. Each seminar is equivalent to 5 hours. Presented contents are pre-proposed or requested by the Faculty.

F – Leadership and Entrepreneurship in Engineering: Students are allowed to conduct 2-credit internship in industrial companies in the 4th semester. This is a must for students to register for Graduation Internship in the 7th semester.

10. Teaching Plan:

For courses which are not put into teaching plan, Academic Office will flexibly open the courses when possible in any semester for students to freely adjust their learning plan:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	LLCT150105	Fundamental Principles of Lenin-Maxism	5	
2.	LLCT230214	Revolutionary Strategy of Vietnam Communist Party	3	LLCT150105
3.	LLCT120314	Ho Chi Minh's Ideology	2	LLCT150105
4.	PHED110613	Physical Training 2	1	
5.	PHED130715	Physical Training 3	3	

Semester 1:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	MATH132401	Mathematics 1	3	
2.	GCHE130603	Engineering Chemistry	3	
3.	GELA220405	General Laws	2	
4.	INPR130155	Introduction to PET	3(2+1)	
5.	GEPR230255	General Printing	3(2+1)	
6.	ENDR130123	Technical Drawing 1	3	
7.	CONE230156	Computer and Computer Networking	3	
Total			20	

Semester 2:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	MATH132501	Mathematics 2	3	MATH132401
2.	PHYS130902	Physics 1	3	MATH132401
3.	PHYS111202	Experiement Physics 1	1	MATH132401
4.	PRMA230257	Printing Materials	3(2+1)	GEPR230255
5.	LAPM210357	Printing Material Practice and Laboratory	1	GEPR230255

6.	CTRE230256	Theory of Colour and Reproduction in Printing Technology	3	GEPR230255
7.	PRIP310956	Practice for Image Processing	1	GEPR230255
8.	PRCG311056	Practice for Computer Graphic	1	GEPR230255
Total			16	

Semester 3:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	PHCH130157	Physical Chemistry in Printing Industry	3	GCHE130603
2.	PHYS131002	Physics 2	3	PHYS130902
3.	GRDE330456	Graphic Design	3	PRIP310956
4.		Social Science and Humanities (Elective course 1)	2	
5.	PLMA330756	Technology of Plate Making	3(2+1)	GEPR230255
6.	PRLT311156	Practice for Electronic Page Layout	1	GEPR230255
7.	PRDI311356	Practice for Digital Imposition	1	GEPR230255
8.	PDPF310857	Practice for Structural Design and Packaging Finishing	1	GEPR230255
Total			17	

Semester 4:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	OCHE226903	Organic Chemistry	2	GCHE130603
2.	DIIM330656	Digital Image Processing	3(2+1)	GEPR230255
3.	ENGR330356	English for Graphic Arts	3	GEPR230255
4.	PRTE330555	Printing Technology	3	GEPR230255
5.	POPR330457	Post Press Processing	3	GEPR230255
6.	PRGD310556	Project for Graphic Design	1	GRDE330456
7.	PRPA311256	Practice for Digital Preflight Analysis	1	GEPR230255
8.	PRPM311456	Practice for Plate Making	1	GEPR230255
Total			17	

Semester 5:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.		Specialised Elective Course (Theory) 1	3	
2.		Specialised Elective Course (Theory) 2	3	
3.	PRPR310856	Prepress Projects	1	DIIM330656
4.	PRJP310655	Printing Technology Projects	1	PRTE330555
5.	PRPO310457	Post Press Technology Projects	1	POPR330457
6.	MEPR230455	Mechanic and Electric of Equipment Printing	3	PRTE330555
7.		Social Science and Humanities (Elective course 2)	2	
8.	PROP321055	Printing Practice	2	PRTE330555
9.	PRPP320957	Post Press Practice	2	POPR330457
10.		Leadership and Entrepreneurship development	2	
Total			20	

Semester 6:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	PRQM330855	Printing Quality Management	3	PRTE330555
2.	SEMM330755	Safety and Equipment Familiarization	3	
3.	PRMA330657	Economics & Organization Print Production	3(2+1)	GEPR230255
4.		Practice for Specialised Knowledge 1	3	
5.		Practice for Specialised Knowledge 2	3	
6.	MPRE130156	Matlab application in Printing Technology	3(2+1)	GEPR230255
7.	MATH132901	Applied Statistics	3	MATH132501
Total			21	

Semester 7:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.		Graduation Internship	2	
2.	PRPM310757	Economics & Organization Print Production Projects	1	PRMA330657
3.	PPQM310955	Print Quality Management Projects	1	PRQM330855

Total	4	
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Semester 8:

No.	Course Code	Course title	Credit no.	Prerequisites' codes
1.	THES471955	Capstone Project	7	
Total			7	

11. Job and Post-graduate study opportunities

Students who graduate PET have ability to: work in the printing company, the packaging and label company, the advertising company and the company provides printing supplies, equipment as operator, supporter or manager. In addition, students who graduate PET can study at higher level in the domestic or abroad school.

12. Date on which the programme specification was written or revised: written in January 2018

13. Description of course contents and credits

13.1. Mathematics 1(3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provides students with fundamental knowledge on limits, continuity, differential-integral calculation for single-variable functions.

13.2. Engineering Chemistry (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provides students with fundamental knowledge on chemistry to be able to further explore other engineering fields.

It helps students understand the molecular intrinsic, develop ability to estimate and calculate thermal dynamics, reaction kinetics, equilibrium, solution properties and electro-chemical battery.

This is the basis for students to digest other basic and specialised knowledge courses in the field and natural sciences for higher knowledge level.

13.3. General Laws: (2 credits)

- Learning time distribution: 2(2/0/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course equips students with fundamental knowledge about Nation, Government and Laws in general and Socialist Government and Laws in specific. Students thus gain relevant and correct perception and point of view on strategy, policy of communist party and national laws as well as some specific laws which help students get good understanding and application of the laws in life.

13.4. Fundamental Principles of Lenin-Maxism (5 credits)

- Learning time distribution: 5(5/0/10)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Beside the 1st chapter which introduces the overview of Lenin-Maxism and the main issues, the rest of the course is divided into 3 parts with 9 chapters:

1st part (3 chapters): Fundamental of Lenin-Maxism cognition and philosophy

2nd part (3 chapters): Economic doctrines of Lenin-Maxism on production pattern of capitalism

3rd part (3 chapters): Lenin-Maxism doctrines on socialism (2 chapters) and current and future socialism (1 chapter)

13.5. Ho Chi Minh's Ideology (2 credits)

- Learning time distribution: 2(2/0/4)
- Preceding courses: None
- Prerequisites: Fundamental principles of Maxism
- Parallel courses: None
- Brief description:

In addition to the 1st chapter of introduction on basis, establishment and development of Ho Chi Minh's Ideology, there are 6 succeeding chapters exploring in details main contents of the ideology.

13.6. Revolutionary Strategy of Vietnam Communist Party (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: Fundamental principles of Lenin-Maxism and Ho Chi Minh's Ideology.
- Parallel courses: None
- Brief description:

The course equips students with fundamental knowledge on Revolutionary Strategy of Vietnam Communist Party, especially the strategy in national renovation period in several social aspects.

13.7. Physical Training 1 (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: Students must be in good health. Special cases must have hospital portfolio or affirmation letter
- Parallel courses: None
- Brief description:

The course provides students with historical development of sports, Olympics, benefits of physical practice, principles and methods for physical training. Students practice broad jump and running and are tested with MoET standardised tests.

13.8. Physical Training 2 (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: Students must be in good health. Special cases must have hospital portfolio or affirmation letter
- Parallel courses: None
- Brief description:

General history, properties, meanings and regulations of volley ball. Moving and ball-touching techniques, and team formation.

13.9. Physical Training 3 (3 credits)

- Learning time distribution: 3(1/2/6)
- Preceding courses: None
- Prerequisites: Students must be in good health. Special cases must have hospital portfolio or affirmation letter.
- Parallel courses: None
- Brief description: *Students are to select 1 of the following 4 sports:*

+ **Football:**

- ✓ Fundamental regulations, competition formation, referee, basic techniques in football playing and ability to self-practice.

+ **Badminton:**

- ✓ Historical development of Badminton, properties, meanings to players, regulations, competition formation, referee and typical playing techniques.

+ **Karatedo:**

- ✓ Fundamental techniques and knowledge about Karatedo, meanings, rituals, terms and regulations.

+ **Taekwondo:**

- ✓ Fundamental techniques and knowledge about Taekwondo, meanings, rituals, terms and regulations.

13.10. Introduction to Printing Engineering Technology (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with general understanding about printing industry, its roles in social-economic environment, labour market and job opportunities of PET graduates. Also, overview of PET training curriculum, required skills to study, ELOs, sub-training programme, career orientation, professional information searching, classifying and processing; research methodologies in PET; methods to set up and conduct experiments, do scientific reports and presentation; time and self potential management. During the course, students are also taken to companies for visits and do a simple assignment on manufacturing process.

13.11. General Printing (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course describe historical development of printing technology and the role of the field in society, printing products and their categorisation; theory and principles of colors and traditional/digital image recovery; principles, processes, key properties and devices for making printing plate, traditional to modern printing techniques and various production for different products.

13.12. Technical Drawing 1 (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with:

- National principles and standards on technical drawings.
- Projections and typical layouts in technical drawing.
- Skill for drawing reading, drawing development.
- CAD software usage.

- Practice on scientific working manner, carefulness of technicians.

13.13. Computer and Computer Networking (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provides knowledge on computers and computer networks, which includes: computer hardwares, computer operating systems; internet and cloud services; networks, LAN equipment and protocols.

13.14. Mathematics 2 (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provide students with integrals, series, exponential series, vectors in plane and space.

13.15. Physics 1 (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: Mathematics 1
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with fundamental knowledge of Physics including mechanics and thermal rules to facilitate their further study in other engineering and technology courses. Students must be able to investigate movements, energy and related physical phenomena in nature from molecular size to planet size. By the end of the course, students will be able to apply their knowledge in scientific research in modern problems. Additionally, the course helps train students on mathematic modelling basing on experimental data, selecting correct data, analysing to predict other results or threshold values of objects.

13.16. Practice for Physics 1 (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: Physics 1
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course has 9 experiments on object kinetics and thermal dynamics. This is a supplement contents for intrinsics of natural physical phenomena, testing theoretical theorems to form students' ability in observation, doing experiments, measuring and calculating, analysing and processing data.

13.17. Printing Materials (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides general knowledge on printing materials (paper, ink, glue, membrane, ...) regarding material construction, physical properties, technical properties, classification... so that students can select relevant materials for printing process.

13.18. Practice for Printing Materials (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students skills on identifying mechanic properties (thickness, weight, paper fibre); optical properties (whiteness, colour, colour fading direction) of papers, which are the bases for students to select paper types for printing process, products; ink properties (viscosity, fineness, parameters); getting familiar with all lab equipment to measure, analyse, calibrate devices when printing.

13.19. Theory of Color and Reproduction in Printing Technology (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course helps train students with perception on colours and colour application in printing technology; recovery methods in printing technology with focus on digital method.

13.20. Practice for Image Processing (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with fundamental image processing techniques such as basic functions of image processing software; image selection and cutting areas to cut off and attach; adjusting images, colour frames to fit with printing technology; setting up relevant dimensions, resolution for printing process; doing printing.

13.21. Practice for Computer Graphic (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course helps train students with computer graphics, simple functions in graphic softwares, ability to draw simple shapes, write words in graphic software, select objects to conduct actions on, create sophisticated shapes from simple ones, scale up/down images, mix colours, double check design before printing, and printing.

13.22. Physical Chemistry in Printing Industry (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: General Chemistry, Organic Chemistry, General Physics
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course equips students with colloid systems and their roles in technology in general and in printing technology in specific (concepts, properties and creation methods of colloid systems); physical chemical colouring (concepts and parameters of light and radiation, reasons that make colours, interaction between light and materials and properties of dye and pigment; polymers and their roles in printing and packaging (concepts, properties and creation methods of polymers)

13.23. Physics 2 (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: Physics 1, Practice For Physics 1, Mathematics 1, Mathematics 2
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provides students with physical principles on optics, Einstein's theory of relativism, quantum mechanics, micro scale phenomena to apply in research on modern issues. Students can recognise that matters have both particle and wave forms. These are fundamental understanding for students to proceed to other modern knowledge fields such as electrical-electronic engineering, computer sciences, nano technology, automatic controll, radiation, energy, etc.

13.24. Graphic Design (3 credits)

- Learning time distribution: 3(3/0/6)

- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students skills to express the design for products including colours, colour mixing, colour intensity, methods to decorate basing on real objectives, handicraft decoration, and computer decoration to add values to printing products.

13.25. Social Science and Humanities (Elective course 1) (2 credits)

- Learning time distribution: 2(2/0/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description: Students are allowed to choose 3 out of the following 13 courses:

+ *General Economics:*

To provide none-economic students with what happened in current economy in both micro and macro scales.

+ *Introduction to Quality control:*

To provide students fundamental knowledge in quality and quality assurance, quality assessment criteria, methods, techniques and tools for quality assurance; standardised quality assurance model for companies.

+ *Introduction to management:*

To train students to become familiar with fundamental management including environmental aspects affecting on companies and management functions in manufacturing process such as : planning, organising, leading and checking. Class activities are offered to improve information searching, public presentation and critical thinking of students.

+ *Introduction to logics:*

To provide students with the cognitive process of human being and the intrinsic of perception. Students afterwards are equipped with fundamental thinking rules and forms of cognition.

+ *Vietnamese Culture:*

This course is deigned for 2nd year students about fundamental knowledge on civilisations generally, Vietnam culture specifically from traditional to modern life,

Also the course helps students to practice skills such as: reference reviewing, public presentation, team work.

+ *Introduction to sociology:*

The course provide none-sociology HCMUTE students with sociology theory, historical development of social science in cognitive development of society and engineering technology, concepts and main research items of sociology in life in terms of methods and research techniques.

+ *Engineering psychology:*

To create connection between technology and human being, engineering students must understand the basic human being psychology. This course provides students with such contents and their application in technological systems.

+ ***System thinking:***

The course equips students with basic knowledge on system thinking method and theory, creative thinking, ability to solve problems systematically, logically and creatively.

+ ***Undergraduate learning skills:***

Students are equipped with undergraduate level learning methods and their application in their study period. As a result, students will conduct their study and research in a logical, systematic and scientific manner.

+ ***Planning skill:***

Students are equipped with planning methods, solution brainstorming and selection to fit with individual potential and contexts. Students must be able to develop their short-term, long-term plans for studying, working effectively in order to manage their time and working schedule.

+ ***Working skills in engineering environment:***

This course belongs to the group of elective engineering courses. It helps students create necessary skills to work in engineering environment, especially in multi-cultural, modern and rapidly changing environment in science and technology.

+ ***Scientific research methodologies:***

During study period in undergraduate level, students does not only obtain knowledge from teachers but also self-study and self-research. Students must be creative and active in doing research. This course includes concepts, processes... basing on what students select their research directions and apply suitable research methodologies in their research projects or capstone projects.

13.26. Technology of Plate Making (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with basic knowledge on making printing plates in various ways (offset, typo, flexo,...) including (for both analog and digital techniques) plate materials, plate manufacturing process and its main devices, quality control methods, etc. In addition, the course requires students to develop correct plate type, specifications fitting with printing requirements (printing methods, printing materials) and products.

13.27. Practice for Electronic Page Layout (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None

- Parallel courses: None
- Brief description:

The course provides students with basic techniques to create page layout for books, newspapers, magazines: data input, treatments on words, paragraphs, line spacing, word spacing, images, colouring in page layout software, overall review product before printing.

13.28. Practice for Digital Imposition (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course helps train students with digital imposition techniques such as template making (Plate template, Scheme template, Job template...); digital imposition processes for books, articles and magazines, packaging and brands, and imposition compensation on different cover types.

13.29. Practice for Structural Design (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course helps students gain skills for designing folding box products, identifying the key parameters of a box (dimensions, materials), creating formula layouts for some box types, developing layouts newly or from sample models in library, creating and managing individual's library, export layout parameters. Also, students gain practical skills for cutting, folding boxes, windows, handles on boxes, operating and calibrating equipment to fulfill the work.

13.30. Organic Chemistry (2 credits)

- Learning time distribution: 2(2/0/4)
- Preceding courses: Hóa học cho kỹ thuật
- Prerequisites:
- Parallel courses: None
- Brief description:

This course provides students with chemical terms, isomers, structure, properties of Hydrocarbon, Alcohol, Aldehyde, Ketone, Carboxylic acid and their derivatives.

13.31. Digital Image Processing (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None

- Parallel courses: None
- Brief description:

This course provides students with digital reading and writing devices (structure and working principles of scanners, digital cameras, character recognition...; specifications for data processing, data forming, data analysis, colour separation,...; Postscript and errors; RIP, PDF and colour management; error prevention in printing.

13.32. English for Graphic Arts (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course focuses on English competence development for students through lesson directly related to printing technology with the following skills: scanning, paragraph structural analysis to understand topics, predicting meanings of unknown words basing on word format and context, using dictionary, summarising main idea, pronouncing correctly technical terms.

13.33. Printing Technology (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course helps students summarise problems in printing technology in modern point of view, main features, principles and applications for traditional and none-plate printing technologies, structure and working principles of traditional and modern printing equipment, printing process, material preparation, printing system configuration, special printing techniques and products.

13.34. Post Press Processing (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course equips students with post-press processing including value adding stages, layout formatting, printing product types, techniques, equipment, materials, criteria for quality control for post press processes, interrelationship among packaging, pre-pressing and post-pressing.

13.35. Project for Graphic Design (1 credit)

- Learning time distribution: 1(0/1/2)

- Preceding courses: Nghệ thuật trình bày ấn phẩm
- Prerequisites: None
- Parallel courses: None
- Brief description:

Students apply knowledge in colouring, layout sketching, decorating, designing principles, designing software,... to create a specific product to enhance designing skills. The design products could be logo, namecard, envelop, leaflet, poster, package, handbag...

13.36. Practice for Digital Preflight Analysis (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

- ✓ The course trains students with basic skills on testing and processing graphic data to obtain “clean” data before making printing plate. The necessary skills to be trained are: checking, processing the relevance of contents and layout; testing and solving image errors; font errors, colour errors; trapping, overprint, hairline...

13.37. Practice for Plate Making (1 credit)

- Learning time distribution: 1(0/1/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with skills to make printing plate in traditional method and CTP method, including film testing, lighting period and intensity, specification configuration, testing chemical solutions, testing printing plate before printing, operating printing devices, creating pathway for PDF file, RIP file, material file... for CTP process.

13.38. Digital Preflight Analysis (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course focuses on specialised knowledge for checking and processing data for printing conditions in various printing technologies, ISO standard conditions for printing, data conversion, PDF file testing and modifying for high quality, trapping, overprint...

13.39. Colour Management (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description

The course provides students with colour management knowledge, colour specifications, colour data for image inputting and processing devices, colour management flowchart.

13.40. Offset Printing Technology (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course equips students with offset printing technology, including printing process, features of offset printing, the role of offset printing techniques in recovering process, interrelationship with pre-pressing and post-pressing stages, material treatments and effects on printing process, calibration techniques, colour treatments, device operation and quality control for offset printing products.

13.41. Packaging Printing Technology (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course provides students with package printing using the 2 popular techniques Flexo and Gravure printing, specifications, equipment, operating process, features and applications of the 2 methods in regard to material types, quality testing for printing plate and products, and real applications.

13.42. Book Binding and Value Added Printing (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with specialised knowledge on forming regular printing products such as soft-cover books, hard-cover books, spring binding notebooks, calendars...; value adding to

printing products; effect creating and related processes; equipment, materials selection, specifications; quality testing standard parameters.

13.43. Structural Design and Packaging Finishing (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with knowledge on structure, design and technology for packaging (soft package, folding package, carton package, paper bag, brand and others), application of CAD software to support packaging design. Students are also equipped with process stages, methods, quality control for packaging finishing for specific products.

13.44. Prepress Projects (1 credit)

- Learning time distribution: 1(1/0/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Students select a specific product to fulfill the following tasks: identifying printing method, necessary material specifications, relevant prepress methods, colouring setup, development printing plate making process (solution selection, software, quality testing process, specifications).

13.45. Printing Technology Projects (1 credit)

- Learning time distribution: 1(1/0/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Students select a real printing product to fulfill the following tasks: choosing materials, developing technical flowchart for a printing product including technology features, manufacturing process, equipment, quality control; setting production specifications, choosing printing method, composing production manual form.

13.46. Post Press Technology Projects (1 credit)

- Learning time distribution: 1(1/0/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Students are allowed to choose on real printing product and fulfill structural analysis, dimensions, materials in accordance with requirements and functions of the product, create postpress flowchart, inter-relationship between prepressing and packaging, select feasible solutions for the product, create production manual form.

13.47. Mechanic and Electric of Equipment Printing (3 credits)

- Learning time distribution: 3 (3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with knowledge on regular electrical and electronic devices used in printing processes; principles, information analysing and processing of automatic systems, operation of machines in prepress, printing and packaging stages.

13.48. Offset Printing Practice (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course focuses on offset printing techniques, machines, general offset printing knowledge and related automatic systems which are mentioned in Safety And Equipment Familiarisation, Maintenance, Mechatronics in printing technology. It is especially important for students selecting the printing courses. For those selecting prepress or postpress, this course also helps them identify the importance of printing stages in the whole printing process, such as printing machine operation, structure and working principles of devices. In addition, students are able to control and operate ink supplying system, ink specifications, materials during printing, colouring, industrial hygiene.

13.49. Post Press Practice (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides product finishing process, simultaneously train them with basic skills on finishing products from preparation steps to operating skills, setting up parameters for post-press procedure and finally the quality control skills for printing products.

13.50. Printing Quality Management (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None

- Prerequisites: None
- Parallel courses: None
- Brief description:

In this course, students will gain knowledge and skills on quality control for printing process, quality, error minimisation through standardised courses. The course mentions to: characteristics of plate making process affect on properties of the plate, plate testing, relationships among measuring parameters and printing properties.

13.51. Safety and Equipment Familiarization (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides regulations for safety; hygienine in printing; chemicals used in printing processes and their effects on users' health or environment and waste treatments. Parallely, students are trained with maintenance and maintenance method selection for printing process, equipment, manufacturing envirenment and workers' safety equipment when working.

13.52. Economics & Organization Print Production (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides basic knowledge on economy, organisation and management for a printing process, predicting printing prices, printing process from receiving order to planning and supervising for manufacturing process in order to gain the highest efficiency.

Besides, students are introduced about copyright and publication laws, manufacturing organisation methods, and quality assurance framework such as ISO; 5S; refined manufacturing process and comprehensive quality assurance.

13.53. Major Practice For Prepress 1 (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with advanced design for paper packages, bags or brochure. Students taking this chance to summarise knowledge on art design, together with file processing skills to

produce the best printing products. In addition, students are also guided to write their Portfolios in personal ideas, and present their potential and skills through images.

13.54. Major Practice for Press 1 (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This is a course for students to practice skills on controlling, operating offset printing machines. The skills include: mounting on the printing plate, aligning paper, checking paper driving system, controlling balance by water level, colouring and operating printing process and quantity. After finishing this course, students are aware of leaflet printing system, operating system principles, safety and in-process adjustment.

13.55. Major Practice for Postpress 1 (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Học phần cung cấp cho người học các kỹ năng chuyên sâu về thiết kế cấu trúc hệ thống bao bì và định hình bao bì. Về mảng thiết kế cấu trúc cho bao bì học phần giúp người học: xác định các yêu cầu về cấu trúc hệ thống bao bì từ cấp 1 đến cấp 3 cho 1 sản phẩm; sử dụng công cụ thiết kế 3D xác lập các thông số chính về cấu trúc từng cấp bao bì (kiểu dáng; kích thước; và vật liệu) phù hợp với yêu cầu của sản phẩm; sử dụng phần mềm thiết kế chuyên dụng ArtiosCAD để thiết lập thông số về kích thước và sơ đồ dàn trang bao bì các cấp; tạo và quản lý bộ thư viện điện tử mẫu hộp cá nhân; thiết kế các mẫu mới và thiết lập công thức để có thể tái sử dụng; xây dựng và quản lý cơ sở dữ liệu về vật liệu; xây dựng và quản lý cơ sở dữ liệu các báo cáo sản xuất (report tự động).

Mảng khác học phần cung cấp cho người học những kỹ năng chuyên sâu về ứng dụng các công cụ sản xuất của ArtiosCad vào việc: sắp xếp và chọn phương án bố trí hộp tối ưu trên tờ in; sử dụng ArtosCAD, plug-in của ArtiosCAD trong IA và phần mềm bình trang điện tử để dàn trang và bình bản trong sản xuất bao bì hộp; tạo file khuôn cần bế và các khuôn gia công tráng phủ, khuôn xé rìa tự động, chỉ bế thông minh; tạo file cho việc xử lý dao; xây dựng và quản lý cơ sở dữ liệu về sản xuất (máy In, máy bế).

13.56. Major Practice for Prepress 2 (3 credits)

- Learning time distribution: 3(0/3/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None

- Brief description:

This course helps train students with specialized skills in colour management, printing plate creation following Computer to Plate (CTP) technique which includes establishing colour management process, calibrating printing machine, linearising equipment, creating colour portfolio, and evaluating colour managing process. Students also practice with numerical prepress flowchart, display, and measuring devices; prepress device maintenance; identifying relevant printing speed; using softwares to support RIP process; detecting printing plate quality; calibrating machines; indentifying errors and necessary solutions for CTP technique printing plate.

13.57. Major Practice for Press 2 (3 credits)

- Learning time distribution: 3(0/3/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This is an advanced practice to complete skills already trained in the course Major Practice For Printing 1. In this course, students take part in real production stages including operating machines, doing Offset, Flexo, indent printing, identifying properties of materials in offset, Flexo, indent printing; systemising production process, calibrating equipment, controlling and stabilising printing products.

13.58. Major Practice for Postpress 2 (3 credits)

- Learning time distribution: 3(0/3/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course offers students with specialised knowledge and skills in manufacturing processes to add value to printing products and solutions for regular products such as soft-cover books, hard-cover books, spring-binding notebooks, notebooks, calendars, paper packages... Students apply their knowledge to identify effects on products to promote manufacturing processes suitable to available working conditions and materials, operate correctly machines and tools to do printing, and work out solutions for errors during producing.

13.59. Matlab application in printing engineering (3 credits)

- Learning time distribution: 3(2/1/6)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

The course provides students with computational simulation for PET engineers using Matlab for colouring and image processing. This is a fundamental knowledge course and a useful tool for numerical calculation for specialised courses.

13.60. Applied Statistics (3 credits)

- Learning time distribution: 3(3/0/6)
- Preceding courses: Mathematics 2
- Prerequisites: None
- Parallel courses: None
- Brief description:

This course include illustration description, elementary statistics, random variables and statistic distribution rules, typical characteristics of random variables, parameter estimation, hypothesis assessment, linear regression and corellation.

13.61. Graduation Internship (2 credits)

- Learning time distribution: 2(0/2/4)
- Preceding courses: None
- Prerequisites: Having conducted internships in Semester 4
- Parallel courses: None
- Brief description:

This course help train students with advanced skills in their specialised field and necessary skills to apply their knowledge in the real production.

13.62. Economics & Organization Print Production Projects (1 credit)

- Learning time distribution: 1 (1/0/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None
- Brief description:

Students are to select a real printing product with technical solution and devices available in a printing company and approval of their advisor; identify technical specifications of the product; develop a manufacturing process from prepressing, printing to complete product; select suitable devices and solutions to fit with the available facilities of the company; prepare materials and calculate workload for each manufacturing stage; estimate product price; calculate manufacturing time and make manufacturing plan; create testing procedures.

13.63. Print Quality Management Projects (1 credit)

- Learning time distribution: 1(1/0/2)
- Preceding courses: None
- Prerequisites: None
- Parallel courses: None

- Brief description:

Quality is the satisfactory to requirements. Each product has a different demand for quality. So does each stage of a printing process. And thus it must be carefully checked to avoid failure. This project helps student to establish standards for every stage in printing process. The key contents include:

Measuring equipment and usage.

Measuring parameters and methods to choose the suitable parameters

Relevant measuring scale selection for testing process.

Testform and equipment calibration.

Testing procedure.

Process standardisation.

13.64. Capstone Project (7 credits)

- Learning time distribution: 7(0/7/14)

- Preceding courses: None

- Prerequisites: None

- Parallel courses: None

This course helps students systemise and upgrade their achieved knowledge in the whole programme.

14. Facilities to support practice

14.1. Workshops, Laboratories and Important Experiment Systems

No.	Title of Laboratory, Workshop, Station, Practice zone	List of key components for practice and experiment
1	Computer room	<ul style="list-style-type: none"> • Networked Computers (IBM) • Macintosh computer • Professional scanners
2	Plate making workshop	<ul style="list-style-type: none"> • Table for pages imposition • Film copying table • Copying frame
3	Digital plate making workshop (CTP)	<ul style="list-style-type: none"> • Networked Computers • Workflow with a full range of advanced CTP-based desktop publishing software: PDF file checking, digital imposition, RIPs, Platesetter software. • Platesetter for making offset plates • Plate processor. • Control and test wedges • Wide-format Inkjet printer for proofing
4	Printing laboratory and offset printing workshop	<ul style="list-style-type: none"> • One color Offset press • 2 colors Offset press

		<ul style="list-style-type: none"> • Paper cutting machines • An ink mixing machine • Negative & Positive sets of separation films for checking the quality of the printing process • Spectro Colorimeter
5	Structural design laboratory and packaging workshop	<ul style="list-style-type: none"> • Computers • A workflow with full package software for structural box designing and for designing different finishing forms (die-cuts, coating forms, stripping forms, die-cuts counter forms...) • A software for controlling sample making machine which can perform digital cutting and creasing boxes (without die cut form). • Equipment for making preprint corrugated cardboards. • Equipment for compression resistance of corrugated fiberboards containers.
6	Postpress workshop	<ul style="list-style-type: none"> • Folding machine • Wire-stitching machine • Thread-stitching machine • Book binding machine • Hot-foil stamping machine • Laminating machine • Die-cutting machine
7	Printing material laboratory	<ul style="list-style-type: none"> • Machine for testing Tensile strength and breaking length • Ink viscometers • Ink gauges • Thickness gauges for measuring the thickness of paper, cardboard, plastic film... • Machine for testing conductivity and pH of fountain solution. • Device for measuring rubber hardness • Magnifier 20x • Reflective densitometer • spectro densitometer

14.2. Library, Website

www.fgam.hcmute.edu.vn

15. Instruction for curriculum implementation

When arranging course distribution for the whole study period, the Faculty take into account the importance of prerequisites, parallel courses among theoretical and practical courses in the programme curriculum.

Fundamental and specialised courses are assigned from the 2nd semester after students have finished general courses. However, 2 special courses entitled Introduction to PET and General printing are offered in the very first semester to provide students with professional career orientation, overall understanding about PET field. Some industrial site visits are also conducted during the 1st semester.

From the 1st to the 6th semesters, students have to handle the following workload:

- General knowledge 48 credits
- Fundamental knowledge 25 credits
- Specialised knowledge 32 credits
- Mechanical practice 11 credit

Within the 4th semester, students could only take maximum of 16 credits to ensure that they are able to spend time for industrial site experience so that they could digest better the specialised knowledge to be taught from the next semester.

Through compulsory theoretical and practical courses, students are equipped with knowledge, skills and competences that a PET engineer must possess.

From the 6th semester, after completing these compulsory theoretical and practical courses, students are instructed to select specialised courses basing on their needs, study ability and employment demands of printing companies. They are allowed to take minimum of 6 credits out of the elective courses. For the workshop courses, students are allowed to take one of the 3 types: pre-press, printing or post-press.

In the 7th semester, after finishing specialised courses, students are arranged to do graduation internship at relevant companies.

Students' workload in the 8th semester includes:

- Internship 5 credits
- Capstone project 7 credits

The workshop courses and specialised courses jointly ensure a firm theoretical and practical knowledge to apply in real printing processes. Thus their adaptability to their future work after graduation.

President

Dean

Appendix 3: Relationships between courses and ELOs of PET programme

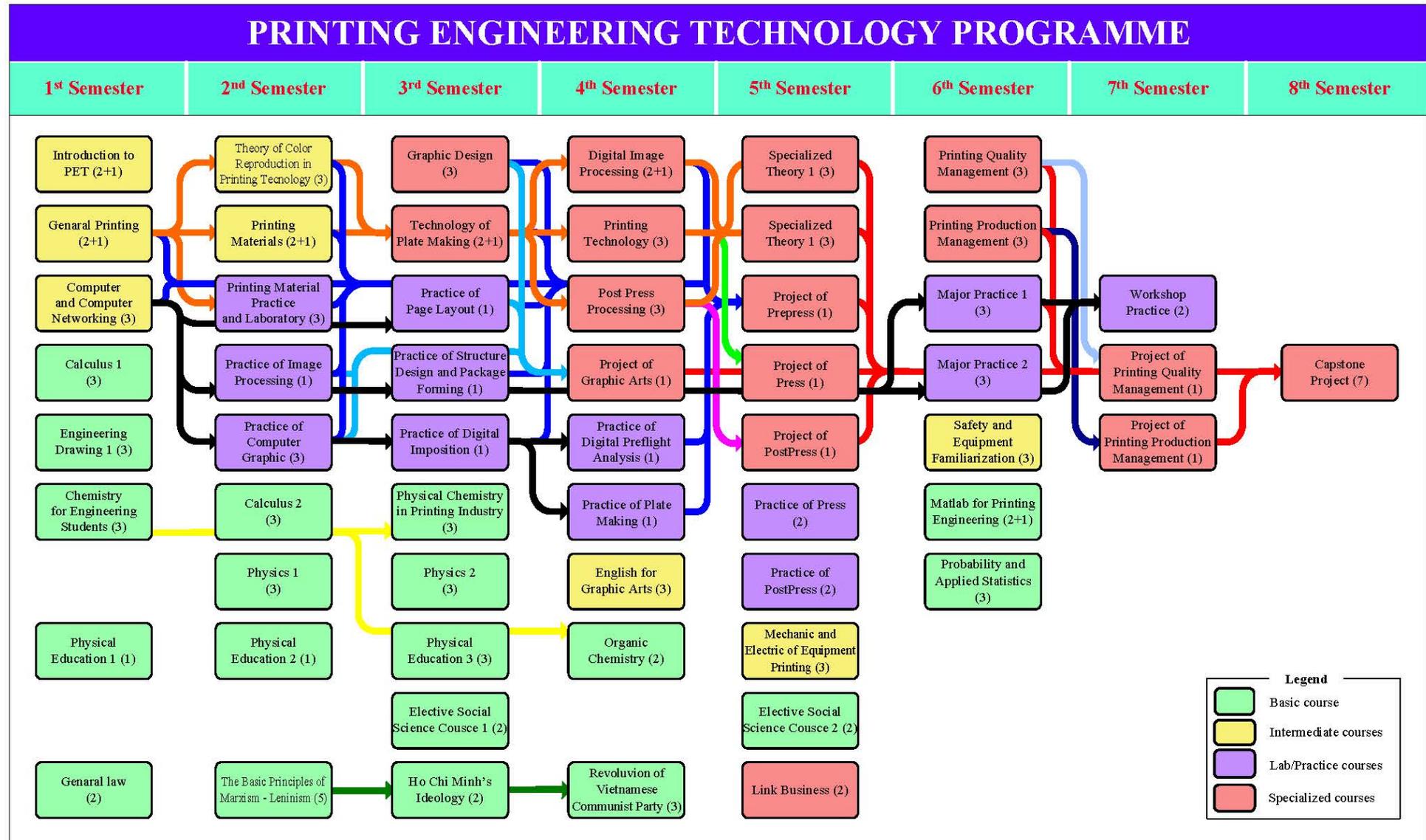
Semeter	Course Name	ELOs													
		1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2
1	Mathematics 1	2			3			2	2		3				
	Engineering Chemistry	2			3	2									
	General laws	2			2			2	2		3				
	Introduction to Printing Engineering Technology		2			2		2	2	2	2	2	2		2
	General Printing		2		2		2	2	2	2		2	2		
	Technical Drawing 1		3		3					2			3		
	Computer and Computer Networking	3			3	2	2	3							
2	Mathematics 2	2			3	3		2	2		3				
	Physics 1	2			3			2	2	2					
	Practice for Physics 1	2				2		2	2						
	Printing Materials		3		3			3	3	3			3		
	Printing Materials Practice and Laboratory		3			3		3	3						
	Theory of Colour and Reproduction in Printing Technology		3	4	3			2	2				3		
	Fundamental Principles Of Lenin-Maxism	2						3			3				
	Practice for Image processing		3	3	3			3	3	3	3		3		
	Practice for Computer Graphic		3	3	3			3	3	3	3		3		
3	Fundamental Economics	2	3		3		2								2
	Physical Chemistry in Printing Industry	3				3		3							
	Physics 2	2			3			2	2	2					
	Graphic Design		3	3				3	3		3		3		
	Technology of Plate Making		3	3	3		3	3	3	3			3		
	Practice for Electronic Page Layout		3	3	3	3		3	3	3	3		3		
	Practice for Digital Imposition			3	3			3	3	3	3		3		
	Practice for Structure Design			3	3			3	3	3	3		3		
	Ho Chi Minh's Ideology	2						3			3				
	Revolucion Strategy of Vietnamese Communist Party	2			2			3			2				
4	Organic Chemistry	2			2			2		2					

	Digital Image Processing		3	4	4			3	3	3			4			
	English for Graphic Arts	3	3						3	3	3					
	Printing Technology		3	4	4		3	3	3	3	4		4			
	Post Press Processing		3	3	4		3	3	3	3	3	3	4			
	Project for Graphic Arts			4	3	3		3	3	3			4			
	Practice for Digital Preflight Analysis			3	3			3	3	3	3		3			
	Practice for Plate Making			3	3	3		3		3			3			
5	Digital Preflight Analysis		3	4	5		4	3	3	3			5			
	Color Management		3	4	5		4	3		3			6			
	Offset Printing Technology		3	4	4	4	4	3	3	3	4	3	5			
	Packaging Printing Technology		3	4	5	5	4	3	3	3	4	4	5			
	Book Binding and Value Added Printing		3	4	5	4	4	3	3	3	4	4	5			
	Structure Design and Package Finishing		3	4	5	5	4	3	3	3	4	4	5			
	Prepress Projects		3	4	4		3	3	3			3	4			
	Printing Technology Projects		3	4	4	4	3	3	3		4	3	4			
	Postpress Technology Projects		3	4	4	4	3	3	3		4	3	4			
	Mechanic and Electric of Equipment Printing	3	3	3	3	3	3									
	Introduction to Quality Management	2			2		3		3	2						2
	Offset Printing Practice		3	3	4	4		3			4		4			
	Postpress Practice		3	3	4	4	4	3			4		4			
	Leadership and Entrepreneurship														3	3
6	Printing Quality Management		3	4	5	5	4	3	3	3	3	4	6			
	Safety and Equipment Familiarisation		3		3	3	3									
	Economics & Organization Print Production			4	3			3	3	3	3	4	4	3	3	
	Major Practice for Prepress 1			4	5	5		3	3		4		5			
	Major Practice for Press 1			4	5	5		3	3		4	4	5			
	Major Practice for PostPress 1			4	5	5		3	3		4	4	5			
	Major Practice for Prepress 2			4	5	5		3	3	3	4	4	5			
	Major Practice for Press 2			4	5	5		3	3		4	4	5			
Major Practice for Postpress 2			4	5	5		3	3		4	4	5				

	Matlab Application in Printing Technology	3	3	3	3	3						3	3		
	Applied Statistics	2			3					2	2				
7	Workshop Practice Prepress			4	5	5	4	3	3		4	5	6		
	Workshop Practice Press			4	5	5	4				4	5	6		
	Workshop Practice PostPress			4	5	5	4				4	5	6		
	Economics & Organization Print Production Project		3	4	4	4	3	3	3		4	3	4		3
	Printing Quality Management Project		3	4	4	4	3	3	3		4	3	4	3	
8	Capstone Project	3	3	4	5	5	4	3	3	3	4	5	6	3	3

(Bloom's Taxonomy which includes Level 1_Remembering, Level 2_Understanding, Level 3_Applying, Level 4_Analyzing, Level 5_Evaluating, Level 6_Creating)

Appendix 4: Curriculum Map



Appendix 5: List of evidence

No	Exh.	Title of Exhibition	Category
	Criteria 1: Expected Learning Outcomes		
1	1.1	Development of Expected learning outcomes	
	1.1a	Law on Undergraduate Education	Document
	1.1b	Vision and Mission of HCMUTE and FGAM	Image
	1.1c	Procedure for building education programme	Document
	1.1d	Plan for building 132-credit PET Curriculum	
	1.1e	Meeting minute for building 132-credit PET Curriculum	Document
	1.1f	Meeting minute for determining knowledge-skill-attitude of PET Curriculum	Document
	1.1g	Surveys of stakeholders for ELOs	Document
	1.1h	Meeting minute of stakeholders for Curriculum	Document
	1.1i	Meeting minute for contributing ideals of 132-credit PET curriculum	Document
	1.1j	Meeting minute for approving 132-credit PET curriculum	Document
	1.1k	Decision of ELOs	Document
2	1.2	Meeting minute for Curricula of reference universities	
	1.2a	Meeting minute for curricula of reference universities	Document
	1.2b	Curricula of reference universities	Document
3	1.3	Vision, Mission, ELOs of HCMUTE and FGAM	
	1.3a	Curriculum, ELOs of PET on website	Image
	1.3b	Vision, Mission at workshop	Image
4	1.4	Engagement of ELOs into curriculum	
	1.4a	Meeting minute for course syllabus	Document
	1.4b	Course syllabus with active teaching methods	Document
	1.4c	Course syllabus of Introduction to PET	Document
	1.4d	Extra-curricular activities	Document
	1.4e	Specialized conference with enterprises	Image
5	1.5	ELOs updates in relation with stakeholders' feedback	
	1.5a	Survey of stakeholders	Document
	1.5b	Survey through conferences	Document

No.	Exh.	Title of Exhibition	Category
	Criteria 2 - Program Specification		
1	2.1	Regulation of Undergraduate Education	
	2.1	17/VBHN-BGDĐT regulation	Document
2	2.2	Course syllabi	

	2.2a	ISO procedure for building course syllabus	Document
	2.2b	Meeting minute for course syllabus	Document
	2.2c	Course syllabi	Document
	2.2d	Curriculum, course syllabi on website	Image
	2.2e	Course syllabus on LMS	Image
3	2.3	Lecturer portfolio	
	2.3	Lecturer portfolio	Document

No.	Exh.	Title of Exhibition	Category
		Criteria 3: Programme Structure and Content	
1	3.1	Methods of teaching, evaluation and assessment align ELOs	
	3.1a	Course syllabus with active teaching methods	Document
	3.1b	Product of Project of Graphic design	Image
	3.1c	Rubric for Capstone Project	Document
	3.1d	Rubric for Project in course	Document
	3.1e	Rubric for Presentation	Document
	3.1f	Rubric for Practice course	Document
	3.1g	Student Activities	Image
2	3.2	Course syllabi	Document
3	3.3	Regulation for higher education	
	3.3	17VBHN-BGDĐT regulation	Document
4	3.4	Updated curriculum	
	3.4a	Survey of stakeholders for 2012 PET curriculum	Document
	3.4b	Procedure for building and adjusting the curriculum	Document
	3.4c	Procedure for building the curriculum of MoET	Document
	3.4d	2012 PET curriculum	Document
	3.4e	2018 PET curriculum	Document
5	3.5	Rubric Matrix with reference universities	
	3.5a	Curricula of reference universities	Image
	3.5b	Meeting minute of comparing with curricula of reference universities	Document

No.	Exh.	Title of Exhibition	Category
		Criteria 4: Teaching and Learning Approach	
1	4.1	HCMUTE Educational Philosophy; Vision and Mission of FGAM	
	4.1a	HCMUTE Educational Philosophy	Document
	4.1b	Missions and vision_FGAM	Image

2	4.2	Maintaining and developing comfortable learning environment to develop students' personality, psychological support, and soft skills	
	4.2a	Self-study areas	Image
	4.2b	Soft skills courses	Image
	4.2c	Student contests	Image
	4.2d	Seminars and conferences	Image
	4.2e	Scholarships for students	Image
3	4.3	Updating advanced teaching and learning methods	
	4.3a	Advanced teaching methodologies in use	Image
	4.3b	Project-based learning students' products in practical courses	Image
	4.3c	PBL students' activities in Major Practice for Prepress 1,2	Image
	4.3d	Seminars and conferences	Image
4	4.4	Integration related activities	
	4.4a	Minutes of reviewing the PET curriculum	Document
	4.4b	International seminars / workshops with foreign printing companies or organization	Image
	4.4c	International Courses in Advanced Graphics Arts	Image
	4.4d	Listening, Reading, Speaking and Writing course in The Philippine	Image
	4.4e	Students exchange Course	Image
5	4.5	Activities in Introduction to Printing Engineering Technology course	
	4.5a	Videos for teamwork / project work	Image
	4.5b	Project-Bassed Learning products	Image
	4.5c	Photos visiting printing companies	Image
	4.5d	Preparing and reporting of industry visit and workplace toure	Document
6	4.6	Digital learning activities and TA supports	
	4.6a	Theory of Color And Reproduction In Printing Technology Course	Document
	4.6b	Practice of Page Layout Course	Document
7	4.7	PBL activities in the course Project of Graphic Design	
	4.7a	Course porfolio of Project of Graphic Arts	Document
	4.7b	Students products	Document
8	4.8	Learning by doing activities	
	4.8a	List of general practical, specialized, and project courses	Document
	4.8b	Guidelines for project courses	Document
	4.8c	WBL activities	Document
	4.8d	Summer Internship	Document
	4.8e	Students' activities	Image

9	4.9	English for Graphic Arts syllabus	
10	4.10	Digital learning and UTEx	
	4.10a	Plan for acceptance of digital teaching courses	Document
	4.10b	Digital courses	Image
	4.10c	UTEx	Image
11	4.11	Learning environment for students	
	4.11a	Employment information regularly updated on the Enterprises relations Office website and on FGAM website	Image
	4.11b	Activities of Student Service Center	Image
	4.11c	Activities of Science and Technology Office for student scientific research and contests	Image
12	4.12	Feedback for teaching and learning ISO procedure	
	4.12a	Procedure	Document
	4.12b	Students feedback forms	Document
	4.12c	Reports on the results of the students' feedback of courses from 2012-2018	
13	4.13	Teaching and learning activities enhance life-long learning	
	4.13a	List of Graphics Media ebooks	Document
	4.13b	Students activities for the community	Image
	4.13c	English clubs for students	

No.	Exh.	Title of Exhibition	Category
	Criteria 5: Student Assessment		
1	5.1	Student enrollment project	Document
2	5.2	HCMUTE Calender	Document
3	5.3	Procedure and sample of writing examination and marking guides	
	5.3a	ISO Procedure for composing and keeping confidentially the test	Document
	5.3b	Samples of final examination of a theoretical course	Document
	5.3c	Sample of a checklist of exam's verification	Document
	5.3d	Marking guides of internship	Document
	5.3e	Teaching portfolios	Document
4	5.4	Projects by learning of students	
	5.4a	Products of projects' courses	Document
	5.4b	Project Products of Graphic Design Course	Document
5	5.5	Syllabi of theoretical courses, experimental courses, course projects	
	5.5a	Sample of theoretical course syllabi	Document
	5.5b	Sample of practical course syllabi	Document

	5.5c	Sample of a course project syllabus	Document
6	5.6	Procedure for examination design, safeguard, replication, receive & delivery, spot	
	5.6a	Procedure for examination design, safeguard, replication, receive & delivery, spot	Document
	5.6b	Samples of progress examination and final examination of a theoretical course	Document
7	5.7	Regulations of university and college in credit system	Document
8	5.8	List of assigned supervisors and reviewers	
	5.8a	List of assigned supervisors and reviewers for capstone projects	Document
	5.8b	Marking guides of Assessments of capstone projects	Document
9	5.9	Course syllabi on FGAM and LMS	Document
	5.9a	Example of FGAM course syllabus	
	5.9b	Example of course syllabi on MS learning system	
10	5.10	Assessment rubrics and marking schemes	
	5.10a	Rubrics for multi-course projects	Document
	5.10b	Rubrics for Internship	Document
	5.10c	Rubrics for Capstone Project	
11	5.11	Student handbook	Document
12	5.12	GPA for classification of students' studying results	
13	5.13	Lecturer portfolio	Document
14	5.14	Evaluating student training process according to HCMUTE criteria	
	5.14a	Regulations of evaluating training process for regular students	Document
	5.14b	Additional regulations of evaluating training process for regular students	Document
15	5.15	Survey for final course evaluating	
	5.15a	Samples of course survey	Document
	5.15b	Result of regulation on course survey	Document
16	5.16	Quick tests in class	Document
17	5.17	Comment of student for course syllabus on LMS	Document
18	5.18	Exercise with feedback for students	Document
19	5.19	Procedure for examination and online answers	
	5.19a	Procedure for examination and online answers for Printing Materials	Document
	5.19b	Procedure for examination and online answers for PHYSICAL CHEMISTRY IN PRINTING INDUSTRY	Document
20	5.20	Comment for project	Document
21	5.21	Appeal procedure	Document

No.	Exh.	Title of Exhibition	Category
		Criteria 6: Academic Staff Quality	
1	6.1	Medium-term strategic plans of HCMUTE	Document
	6.1a	HCMUTE Strategic Plan 2011-2015 vision to 2020	
	6.1b	HCMUTE Strategic Plan 2017-2022 vision to 2030	
	6.1c	HCMUTE Quality Objective 2014-2018	
	6.1d	HCMUTE Quality Objective 2018-2019	
2	6.2	Medium-term strategic plans of FGAM	Document
3	6.3	Personnel development plan	Document
4	6.4	Workload information and working environment surveys	Document
5	6.5	FGAM Personnel recruitment strategy	Document
6	6.6	ISO recruitment procedure	Document
7	6.7	FGAM personnel appointment process	Document
8	6.8	Process of HR development	Document
9	6.9	Work contract and Job description	Document
10	6.10	Regulations for teachers, Decision 2765/QĐ-DHSPKT dated 18 Dec 2018	Document
11	6.11	Academic staff probation portfolios	Document
12	6.12	Student survey forms, Survey results and Class observation feedback	Document
13	6.13	MOU with Chulalongkorn University	Document
14	6.14	Projects and workloads	Document
15	6.15	ISO procedure for human resource training and development	Document
16	6.16	FGAM plan for further training	Document
17	6.17	Photos of academic staff's achievement presentation	Image
18	6.18	Academic staff's certificates of completion	Document
19	6.19	Academic staff's working plan, evaluation and KPI results	Document
20	6.20	Commendation papers and Decision on commendation for the success of FGAM in organising International conference	Document
21	6.21	Academic staff's research projects	Document
22	6.22	University – Industry projects	Document
23	6.23	Pictures of national and international conferences	Document
24	6.24	MOU with other foreign partners	Document

No.	Exh.	Title of Exhibition	Category
		Criteria 7: Support Staff Quality	
1	7.1	Job description for faculty secretary, technical maintenance staff and laboratory staff	Document

2	7.2	Call for job applications; Recruitment results and Probation contracts	Document
	7.2a	Recruitment announcements	
	7.2b	Recruitment results	
	7.2c	The probationary contract	
3	7.3	Table of task arrangement, Meeting reports, Self-evaluation form with authorities' comments	Document
4	7.4	Regulations for regular and early salary increment for staff	Document
5	7.5	Evidences for human resource development implementation in HCMUTE	Document
6	7.6	Staff's desires for further learning	Document
7	7.7	Evidences for ISO 9001:2015 training courses; training courses on communicative English improvement for staff	
8	7.8	KPI Evaluation forms; KPI Evaluation results for staff	Document
9	7.9	Commendation decisions	Document
	7.9a	Announcement of emulation	Document
	7.9b	Decision of emulation	Document
10	7.10	Communication channels between staff and university management	Document
	7.10a	Conference officials	Document
	7.10b	Images of conference officials	Image

No.	Exh.	Title of Exhibition	Category
		Criteria 8: Student Quality and Support	
1	8.1	HCMUTE 2019 admission plan	
	8.1a	Enrollment project 2015 - 2019	Document
	8.1b	Decision on tuition fee exemption for students 2014-2018	Document
	8.1c	Admission sectors 2019	Document
	8.1d	List of high schools prioritized for consideration for studying in 2019	Document
	8.1e	UTE TV interface	Document
2	8.2	Statistics of Open Days and Admission Fair	
	8.2a	Plan of the Open Days 2016 - 2019	Document
	8.2b	Plan to send students to high school	Document
	8.2c	Photos of the Open Days	Document
3	8.3	Admission information on website	
	8.3a	MOET statute for student admission for Universities and Colleges.	Document
	8.3b	Reference point of HCMUTE 2015-2018	Document
	8.3c	The decision to accept the successful students 2015 - 2016	Document

4	8.4	HCMUTE 2019 admission plan	
5	8.5	The online website and students' accounts	Image
6	8.6	The online website and Teachers' accounts	Image
7	8.7	Dashboard statistics of students' learning progress and results	
	8.7a	Academic alerts of students.	Document
	8.7b	Report assessing training results	Document
	8.7c	Dashboard display	Image
	8.7d	Academic warnings of the Office of Admission and Student Affairs (OASA)	Image
8	8.8	Club activities	
	8.8a	Vovinam Club.	Image
	8.8b	Skills club activities	Image
	8.8c	English club	Image
9	8.9	FAQs of FGAM	
	8.9a	FAQs-FGAM.	Document
	8.9b	Meeting minutes of advisory board and the students 2015 - 2019	Document
	8.9c	Report of Meeting minutes of advisory board and the students	Document
10	8.10	Summary results consulting of student evaluation lecturers	
	8.10a	Survey results of lecturers by subjects	Document
	8.10b	Lectures evaluation display	Document
	8.10c	Report Survey on teaching quality	Document
11	8.11	Soft-skills training courses	
	8.11a	Calendar of skill classes	Document
	8.11b	CV Lecturer	Document
	8.11c	Images of soft skills classes	Document
12	8.12	Company site-visits guidance	
	8.12a	List of students visiting 28.03	Document
	8.12b	List of students visiting 04.04	Document
	8.12c	List of students visiting 03.04	Document
	8.12d	Student visit report	Document
	8.12e	Student_s email	Document
	8.12f	Visiting the Alliance Print Technologies Co Ltd.	Document
	8.12g	Visiting the Number 7 print Joint stock Company.	Image
13	8.13	Student welcome ceremony plan	
	8.13a	Student_s welcome plan of FGAM 2017-2018	Document
	8.13b	The introductory camp welcomes the freshman 2015-2017	Document
14	8.14	Admission procedures and process	
	8.14a	Student handbook 2005	Document

	8.14b	Student handbook 2016	Document
	8.14c	Student handbook 2017	Document
	8.14d	Student handbook 2018	Document
	8.14e	Admission guidelines 2013	
	8.14f	Admission guidelines 2016	
15	8.15	Alumni scholarships to students	
	8.15a	Scholarship for female students studying engineering 2015 - 2019	Document
	8.15b	Decision 50_ of tuition fees, semester 1 2016-2017.	Document
	8.15c	Advertise on tuition fee exemption and reduction for disadvantage economically 2018-2019	Document
	8.15d	Decision on scholarships to encourage learning 2017-2018	Document
	8.15e	Decision on financial award for top two highest score enrolment 2018	Document
	8.15f	Scholarship of FGAM alumni association for studen's FGAM	Document
16	8.16	Self-study zones for students	Image
17	8.17	Activities of Groups/Teams/Clubs	
	8.17a	Plan of Dance festival 2019.	Document
	8.17b	Green Summer Volunteer	Document
	8.17c	The singing contest for students plan	Document
	8.17d	The student sports festival plan	Document
	8.17e	The cultural, sports and volunteer activities	Image
	8.17f	Sudent union work report	Document
18	8.18	Insurance, health care and Psychological consultation for students	
	8.18a	List of counselors.	Document
	8.18b	FQAs school health	Document
	8.18c	Compulsory health insurance	Document
	8.18d	The consulting activities	Image

No.	Exh.	Title of Exhibition	Category
		Criteria 9: Facilities and Infrastructure	
1	9.1	Printing workshop layout	Document
2	9.2	Equipment purchasing plan and Functions of Office of Equipment Management	Document
	9.2a	Annual budget lists for FGAM investment	Document
	9.2b	Announcement for maintenance	Document
	9.2c	Sample of Purchase planning FGAM	Document
3	9.3	UTEx interface	Image
4	9.4	HCMUTE development plans	Document

5	9.5	Survey and feedback from staffs and students	Document
	9.5a	Survey of staff's satisfaction 2015-2017	Document
	9.5b	Report of staff's satisfaction 2015-2018	Document
6	9.6	Regulation of the library, list textbook of Library and FGAM bookshelf	
	9.6a	Regulation of the library	Image
	9.6b	Resoucre information	Document
	9.6c	Mini library of FGAM	Image
7	9.7	Failities of the library	Image
	9.7a	High quality space	Image
	9.7b	Library zone A	Document
8	9.8	Images of featured activities of Library	Document
	9.8a	Co-operation with universities	Document
	9.8b	E-library account	Document
	9.8c	Exchanging books	Document
	9.8b	Seminars with the famous person	Image
9	9.9	Survey questionnaires of Library	Document
10	9.10	Job description for technical staff	Document
11	9.11	Report on equipment usage efficiency and simple amendment	Document
	9.11a	Report of equipments' status 2016-2017	Document
	9.11b	Report of equipments' status 2017-2018	Document
12	9.12	Statistics of computers and projectors of EMO	Document
13	9.13	Interface of PSC management software and website	
	9.13a	Interface of PSC management software	Image
	9.13b	LMS report	Image
	9.13c	Images and interfaces of LMS and UTEx	Image
14	9.14	Guards' responsibilities and regulations	Image

No.	Exh.	Title of Exhibition	Category
		Criteria 10: Quality Enhancement	
1	10.1	Decision on establishment of FGAM	Document
2	10.2	Newly developing or adjusting curriculum procedure	
	10.2a	Procedure of design and adjusting training programs 2005.	Document
	10.2b	Procedure for evaluating stakeholder's satisfaction with curriculum.	Document
	10.2c	Procedure for evaluating student's satisfaction during the training period.	Document
	10.2d	Setting up and revising curriculum procedure 2015	Document

	10.2e	Designing curriculum procedure 2017	Document
	10.2f	Revising curriculum procedure 2019	Document
3	10.3	Scientific conference on curriculum development	
	10.3a	Plan to review periodic the curriculum 2015 - 2016.	Document
	10.3b	Meeting minutes of stakeholder 2018.	Document
4	10.4	FGAM Alumni meeting	
	10.4a	Meeting of alumni association of FGAM 2014.	Document
	10.4b	Minutes of Start-up workshop for students of FGAM	Document
5	10.5	FGAM periodical talks with students	Document
	10.5a	Meeting minutes between students and FGAM	Document
	10.5b	Meeting minutes of advisory board and the students 2015 - 2019	Document
6	10.6	Inputs & feedback of stakeholders for the curriculum development	
	10.6a	Plan to review periodic the curriculum 2015 – 2016.	Document
	10.6b	Meeting Minutes of stakeholder 2018.	Document
	10.6c	Survey forms for employers	Document
	10.6d	Survey forms for alumni 2018.	Document
	10.6e	Reports of annual meetings and workshops with alumni	Document
	10.6f	Reports of annual meetings and workshops with employers	Document
	10.6g	Survey results of graduated students 2018.	Document
7	10.7	Procedures of assuring teaching and learning quality	
	10.7a	Procedure for planning and implementing teaching.	Document
	10.7b	Procedure for inviting and managing visiting lecturers.	Document
	10.7c	Classroom observation procedure.	Document
	10.7d	Procedure for inspecting and examining the compliance with teaching statute of lecturer.	Document
	10.7e	Procedure for composing and keeping confidentially the test, replicating writing test; delivering, receiving the test and grade.	Document
	10.7f	Monitoring final examination procedure.	Document
	10.7g	Planning and organizing examination procedure.	Document
8	10.8	Lecturer portfolio	
	10.8a	Offset Technology course	Document
	10.8b	Printing Technology courses	Document
9	10.9	Internship and site-visit reports	
	10.9a	Graduate internship report-Nguyễn Thị Hoa-15148016.	Document
	10.9b	Graduate internship report-Phạm-Hoàng-Duy-15148008.	Document
	10.9c	Internship Logbook Guidelines.	Document
	10.9d	Survey on Completion of the Internship.	Document
	10.9e	Visit report Nguyen Quoc Dai-17148123.	Document

	10.9f	Visit report NguyenMyNhi	Document
10	10.10	Improvement in the Teaching and Learning activities	
	10.10a	ELOs focuses on soft skills	Document
	10.10b	Exam of Course Printing Technology.	Document
	10.10c	Group homework.	Document
	10.10d	Homework- 17148016_HoangThiMyHanh.	Document
	10.10e	Homework Nguyenvungocdanh_16148073.	Document
	10.10f	Course syllabus and teaching schedule of Printing Technology course.	Document
	10.10g	Learning regulations printing Technology.	Document
11	10.11	Improvement in Courses assessment activities	
	10.11a	Capstone Project.	Document
	10.11b	Rubrics for oral presentations.	Document
	10.11c	Rubrics - Project Printing Technology.	Document
	10.11d	Rubrics – Internship.	Document
	10.11e	The summative assessment Course of Print quality management.	Document
	10.11f	The answer to the final exam Course of Print quality management.	Document
	10.11g	The answer to the final exam Course of Printing Technology.	Document
	10.11h	The summative assessment Course of Printing Technology.	Document
12	10.12	Application of scientific research results in teaching	
	10.12a	Teaching to professional Practice printing 1 flexible knowledge theory in FGAM.	Document
	10.12b	Building the question form for operating web offset printers.	Document
	10.12c	Design of practice examinations standard for operating sheetfed printer.	Document
	10.12d	Standardize of printing production process.	Document
13	10.13	Survey results on student supporting service quality	
	10.13a	Survey form student satisfaction about service quality of HCMUTE 2015 - 2018	Document
	10.13b	Report the results of student satisfaction survey about service quality of HCMUTE 2015 - 2018	Document
14	10.14	Libraries and services for students	
	10.14a	Survey report of LIB 2017-2019	Document
	10.14b	Digital library	Document
	10.14c	Online database	Document
	10.14d	Specialized magazine.	Document
	10.14e	Network of scientific and technical HCM city.	Document
	10.14f	ocw.mit.edu.	Document
	10.14g	Laboratory of FGAM.	Document
	10.14h	Products of the library.	Document

	10.14i	Student service activities.	Document
15	10.15	HCMUTE Career center	
	10.15a	Career center.	Document
	10.15b	Recruitment golden week	Document
16	10.16	Student online feedback forms and reports for teaching quality	
	10.16a	Survey form for teaching quality – Theory.	Document
	10.16b	Survey form for teaching quality – Practice.	Document
	10.16c	Survey form for teaching quality - Project, Thesis.	Document
	10.16d	Report survey results for teaching quality 2015 -2019	Document
17	10.17	Survey results on students three months after graduation	
	10.17a	Survey form for newly graduated students	Document
	10.17b	Survey results of newly graduated students 2014 - 2018	Document
18	10.18	Survey results on Alumni	
	10.18a	Survey form for Alumni 2016 - 2018	Document
	10.18b	Report survey results of Alumni 2016 - 2019	Document
19	10.19	Survey results on faculty members' satisfaction on working environment	
	10.19a	Survey form of jobholder about the working environment at HCMUTE 2016 - 2018	Document

No.	Exh.	Title of Exhibition	Category
	Criteria 11: Output		
1	11.1	Financial supports for students	Document
	11.1a	Financial support for student of FGAM	Image
	11.1b	Financial support for student of UTE	Document
2	11.2	Open-day activities	
	11.2a	Plan for Open Days Event	Document
	11.2b	Activities of Open Days Event	Image
3	11.3	Initiation ceremony activities	
	11.3a	Plan for Welcome freshman Event	Document
	11.3b	Activities of Open Days Event	Image
4	11.4	Learning consultation for students	
	11.4a	Talk show about learning method in university	Image
	11.4b	Time management	Image
	11.4c	Schedule for softskill class	Document
	11.4d	Report of academic counseling	Document
5	11.5	Part-time jobs for students	
	11.5a	Regulations on teaching assistants	Document

	11.5b	Introduce partime job form student support center	Document
6	11.6	Psychological consultation for students	
	11.6a	Talkshow love Rubik	Image
	11.6b	School Psychology Counseling from student support center	Image
	11.6c	Student Entertainment actives	Image
7	11.7	Statistics on employment of students after graduation	
	11.7a	Form of Survey students after graduation	Document
	11.7b	GOLD recruitment program of Avery Dennison	Document
8	11.8	Supporting activities for student employment	
	11.8a	Job Fair day	Image
	11.8b	Enterprise Recruiment annoucement from ERO.	Document
	11.8c	Enterprise Recruiment annoucement from FGAM	Document
	11.8d	List company join recruiment at HCMUTE	Document
	11.8e	Golden week of recruitment	Document
9	11.9	Academic and scientific contests	Image
	11.9a	Adobe certified associate world championship 2019	Image
	11.9b	Confetti creative awards	Image
	11.9c	Design Printing product	Image
	11.9d	Design logo	Image
	11.9e	Contest of Create love	Image
	11.9f	“Good at workmanship, Stable future	Image
10	11.10	Students’ products of project courses and capstone projects	
	11.10a	Products from practice subject	Image
	11.10b	Products from research	Image
11	11.11	Table of Financial supports for students’ research	Document
12	11.12	Survey on students’ satisfaction during studying	Document
	11.12a	Student Meeting minutes	Image
	11.12b	Result of student questions	Image
	11.12c	Student survey about teaching quality	Image
13	11.13	Survey on teachers’ satisfaction	
	11.13a	Staff meeting minutes	Document
	11.13b	Staff survey about working environment	Document
	11.13c	Result of Survey about working environment	Document
14	11.14	Survey on Industrial partners’ satisfaction	
	11.14a	Survey form	Document
	11.14b	Result of survey	Document
15	11.15	Survey on alumni’s satisfaction	
	11.15a	Survey form	Document

	11.15b	Introduction of survey	Document
	11.15c	Result of survey	
16	11.16	English improvement activities for students	Document
	11.16a	English speak club UTE	Image
	11.16b	English Club of FGAM	Image

Appendix 6: Some pictures of activities at FGAM



FGAM academic staffs



FGAM academic staffs in Cambodia



G7 seminar with Idealliance



30th anniversary of FGAM



55th anniversary of HCMUTE



Open day



Welcoming freshmen



Field trip



Scholarship of alumni



Scholarship of Giay LanVi company



Captone project Presentation



Graduated students



HCMUTE

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