PEOPLE'S COMMITTEE OF HO CHI MINH CITY

LY TU TRONG COLLEGE OF HO CHI MINH CITY

TRAINING PROGRAM OF COLLEGE LEVEL

COURSE TITLE: MECHANICAL ENGINEERING TECHNOLOGY

Ho Chi Minh City – 2020

PEOPLE'S COMMITTEE OF HO CHI MINH CITY
LY TU TRONG COLLEGE OF
HO CHI MINH CITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

TRAINING PROGRAM

Name of business: Mechanical Engineering Technology

Code of business: 6510201.

Education level: College.

Forms of training: Regular (Credit).

Enrollment objects: Graduated from high school or equivalent with a pass in Mathematics and preferably Physics (or studied engineering subjects)

Training time: 2.5 years

1. Training objective

1.1. General objective:

- Having basic knowledge about the basic principles of Marxism - Leninism; revolutionary methods of the Communist Party of Vietnam; Ho Chi Minh Ideas; law.
- Having basic knowledge about social sciences and humanities suitable for the trained majors.
- Having basic knowledge about natural sciences, meeting the reception of professional education knowledge and ability to study at a higher level.

1.2. Detail goal:

a. Knowledge:

- Present international standards applied in the field of mechanical engineering;
- Explain material symbols according to international and regulations standards of Vietnam (TCVN), China, Soviet Union (GOCT), USA (SAE, AISI), France (AFNOR), Germany (DIN) , Japan (JIS), UK (BS);
- Present the properties of metal, alloying and non-metal materials commonly used in industry.
- Ability to read ISO standard drawings.
- Present 5S and Kaizen standards in the workplace.
- Present structure and operating principles of the equipment applied in the manufacturing process.
- Analysis of technical parameters of the manufacturing process.
- Presentation of structure diagram, working principle of common and modern mechanical actuators.
- Present principles and order of preparation for the production process. Analyze the industrial operation, industrial maintenance and industrial cleaning processes of the cutting machines.
- Present machining method to each technology, failure types, causes, and solving problem.
- Present programming process, operating procedures, and adjust when machining on metal cutting machines.and CNC machines.

- Having knowledge about Labor safety in industry.

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b. Skill:

- Design manufacturing and assembly drawings
- Organizing and implementing works in the Mechanical Engineering. Responsible for mechanical jobs at companies, factories in the field of mechanical engineering services.
- Perform necessary maintenance jobs for industrial machines
- Planning, organizing and implementing a plan on Mechanical Engineering.
- Manage and do the work of the technical team. Performing tasks assigned by the organization and leadership
- Participate in production management on mechanical engineering technology, mechanical equipment at the workshop.
- Program, operate and adjust metal cutting machines and CNC machines.
- Applying communication skills to express, critique and write reports on professional and technical issues before groups and collectives.
- Achieve level 3/5 of the national vocational skill standards;
  Informatics meet IC3 standards or equivalent or higher; Certification of applied information technology issued by the University (except for IT students).
- Foreign language grade 3 of the 6-level foreign language competence framework for Vietnam or higher; Certificate of English language proficiency level B1 or equivalent or higher, a certificate issued by the school.

c. Level of autonomy and responsibility:

- Responsible for citizens, open attitude, good performance of professional ethics standards, respect for discipline and internal rules of the unit and working in industrial manner;
- Having a spirit of cooperation in teamwork and independent work.
- Actively working with scientific methods, goodwill to solve problems arising in practical work and to draw experience in the working process.
- Self-discipline to exercise good health to meet the work requirements of the unit and to build and defend the Nation.

1.3. Job position after graduation:

- Working ability: Responsible for electrical works at industrial enterprises, consulting companies, mechanical engineering companies, automotive companies, suppliers, Research and technology institute in the field of mechanical engineering, administrative and non-business agencies.
- Working position: Mechanical technical staff on operation, maintenance, management, assembly of mechanical systems, technical and technological consultancy or executive managers in enterprises and Public Works Company, factory.

2. Volume of knowledge and course duration:

- Number of subjects: **43**
- Volume of knowledge and skills for the entire course: **100** credits
- Volume of general subjects: **525** sessions
- Volume of professional subjects: **1985** sessions
- Theoretical volume: **621** sessions; exercise, practice, and experiment: **1832** sessions
- Course duration: 2.5 years

3. Content Training Program:

Subject code	Subject Title	Credits	Study Time (45 minutes per session)			
			Total number of Sessions	Theory	Practice / internship/ experiments / exercises / discussion	Test
I	**Fundamental Knowledge**	**30**	**525**	**240**	**255**	**30**
CTC304	Political Training	4(3,1,7)	75	41	29	5
CTC305	Law	2(2,0,4)	30	18	10	2
CBC305	Physical Training	2(0,2,1)	60	5	51	4
CBC307	Security and Defense Training	4(3,1,7)	75	36	35	4
TTC301	Informatics	4(1,3,4)	75	15	58	2
CBC301	English 1	3(1,2,3)	40	14	24	2
CBC302	English 2	3(1,2,3)	40	14	24	2
CBC303	English 3	2(1,1,3)	40	14	24	2
CBC304	English 4	2(2,0,4)	30	28		2
KTC301	Soft Skills	4(4,0,8)	60	55		5
II	**Advanced Engineering Fundamental Subjects**	**70**	**1985**	**381**	**1577**	**27**
II.1	**CORE ENGINEERING FUNDAMENTAL SUBJECTS**	**16**	**273**	**138**	**122**	**13**
CKC300	Save Energy and Protect Environment	2(2,0,4)	30	9	20	1
CKC301	Occupational Safety	2(2,0,4)	30	28		2
CKC302	Mechanical Drawing	4(2,2,5)	90	28	60	2
CKC303	Tolerances and Metrology	2(2,0,4)	30	28		2
CKC333	Strength of Materials (replaced with CoGC curriculum)	2(1,1,3)	31	16	13	2
CKC332	Statics (replaced with CoGC curriculum)	2(1,1,3)	31	16	13	2
CKC306	Power Drives (replaced with CoGC curriculum)	2(1,1,3)	31	13	16	2

Subject code	Subject Title	Credits	Study Time (45 minutes per session)			
			Total number of Sessions	Theory	Practice / internship/ experiments / exercises / discussion	Test
II.2	**ADVANCED ENGINEERING FUNDAMENTAL SUBJECTS**	**46**	**1532**	**187**	**1335**	**10**
CKC307	Manufacturing Technology)	4(3,1,7)	75	43	30	2
CKC308	Theory of Metal Cutting	4(3,1,7)	75	43	30	2
CKC334	Pneumatics and Hydraulics (replaced with CoGC curriculum)	2(0.7,1.3,2.7)	31	10	19	2
CKC310	CNC Programming	3(3,0,6)	45	43		2
CKC311	Engineering: Applying Information Technology (replaced with CoGC curriculum)	2(0.3,2.7,3.3)	31	5	26	
CKC327	Modern Manufacturing Processes	3(3,0,6)	45	43		2
CKC312	Basic Workshop Practice	2(0,2,1)	60		60	
CKC313	Basic Welding Practice	2(0,2,1)	60		60	
CKC324	Advanced Welding Practice	2(0,2,1)	60		60	
CKC314	Basic Turning Practice	3(0,3,2)	90		90	
CKC315	Advanced Turning Practice	2(0,2,1)	60		60	
CKC316	Basic Milling Practice	3(0,3,2)	90		90	
CKC317	Advanced Milling Practice	2(0,2,1)	60		60	
CKC318	Basic CNC Machining	2(0,2,1)	60		60	
CKC325	Modern Manufacturing Practice	2(0,2,1)	60		60	
CKC319	Project of Mechanism and Elements Design	1(0,1,1)	45		45	
CKC320	Project of Manufacturing Technology	1(0,1,1)	45		45	
CKC321	Graduate Practice	6(0,6,0)	270		270	

Subject code	Subject Title	Credits	Study Time (45 minutes per session)			
			Total number of Sessions	Theory	Practice / internship/ experiments / exercises / discussion	Test
CKC399	Internship Program	6(0,6,0)	270		270	
II.3	**Elective subjects (Select 2 subjects Theority+2 workshop)**	**8**	**180**	**56**	**120**	**4**
CKC322	Metal Cutting Machine	2(2,0,4)	30	28		2
CKC323	Advanced Computer Aided Design	2(2,0,4)	30	28		2
CKC326	Optimization in Metal Cutting Processes	2(2,0,4)	30	28		2
CKC357	Mold Technology	2(2,0,4)	30	28		2
CKC329	Advanced CNC Machining	2(0,2,1)	60		60	
CKC330	Mechanism Repair and Maintenance Practice	2(0,2,1)	60		60	
CKC328	Mold Machining	2(0,2,1)	60		60	
CKC331	Multi Axis CNC Machining	2(0,2,1)	60		60	
Total		**100**	**2510**	**621**	**1832**	**57**

4. Training Plan:

No.	Subject code	Subject Title	Number of Credit	Subject Code: Study first (a) Study in parallel (b)	Notes
Semester 1			**18**		
Compulsory subjects			**18**		
1	CBC307	Security and Defense Training	4(3,1,7)		
2	KTC301	Soft Skills	4(4,0,8)		
3	CKC302	Mechanical Drawing	4(2,2,5)		
4	CKC301	Occupational Safety	2(2,0,4)		
5	CKC332	Statics (replaced with CoGC curriculum)	2(1,1,3)		
6	CKC312	Basic Workshop Practice	2(0,2,1)	CKC301(b)	
Semester 2			**21**		

No.	Subject code	Subject Title	Number of Credit	Subject Code: Study first (a) Study in parallel (b)	Notes
Compulsory subjects			**21**		
1	CBC305	Physical Training	2(0,2,1)		
2	CTC304	Political Training	4(3,1,7)		
3	CBC301	English 1	3(1,2,3)		
4	CKC300	Save Energy and Protect Environment	2(2,0,4)		
5	TTC301	Informatics	4(1,3,4)		
6	CKC333	Strength of Materials (replaced with CoGC curriculum)	2(1,1,3)		
7	CKC303	Tolerances and Metrology	2(2,0,4)		
8	CKC313	Basic Welding Practice	2(0,2,1)		
Elective subjects			**0**		
Semester 3			**20**		
Compulsory subjects			**16**		
1	CBC302	English 2	3(1,2,3)		
2	CKC306	Power Drives (replaced with CoGC curriculum)	2(1,1,3)		
3	CKC310	CNC Programming	3(3,0,6)		
4	CKC311	Engineering: Applying Information Technology (replaced with CoGC curriculum)	2(0.3,2.7,3.3)		
5	CKC314	Basic Turning Practice	3(0,3,2)		
6	CKC316	Basic Milling Practice	3(0,3,2)		
Elective subjects 1 *(2 of 4 subjects selected)*			**4**		
1	CKC323	Advanced Computer Aided Design	2(2,0,4)	CKC311(a)	
2	CKC357	Mold Technology	2(2,0,4)		
3	CKC326	Optimization in Metal Cutting Processes	2(2,0,4)		
4	CKC322	Metal Cutting Machine	2(2,0,4)		
Semester 4			**24**		
Compulsory subjects			**22**		
1	CTC301	Law	2(2,0,4)		
2	CBC303	English 3	2(1,1,3)		
3	CKC307	Manufacturing Technology	4(3,1,7)		
4	CKC308	Theory of Metal Cutting	4(3,1,7)		
5	CKC334	Pneumatics and Hydraulics (replaced with CoGC curriculum)	2(0.7,1.3,2.7)		

No.	Subject code	Subject Title	Number of Credit	Subject Code: Study first (a) Study in parallel (b)	Notes
6	CKC319	Project of Mechanism and Elements Design	1(0,1,0)	CKC306(a)	
7	CKC327	Modern Manufacturing Processes	3(3,0,6)		
8	CKC315	Advanced Turning Practice	2(0,2,1)	CKC314(a)	
9	CKC318	Basic CNC Machining	2(0,2,1)	CKC310(a)	
Elective subjects 1 (1 of 2 subjects selected)			**2**		
1	CKC329	Advanced CNC Machining	2(0,2,1)	CKC318(a)	
2	CKC330	Mechanism Repair and Maintenance Practice (**)	2(0,2,1)	CKC312(a)	
Semester 5			**17**		
Compulsory subjects			**15**		
1	CKC321	Graduate Practice	6(0,6,0)		
2	CKC317	Advanced Milling Practice	2(0,2,1)	CKC316(a)	
3	CBC304	English 4	2(2,0,4)		
4	CKC320	Project of Manufacturing Technology	1(0,1,0)	CKC307(a)	
5	CKC324	Advanced Welding Practice (**)	2(0,2,1)	CKC313(a)	
6	CKC325	Modern Manufacturing Practice (**)	2(0,2,1)	CKC327(a)	
Elective subjects 1 (1 of 2 subjects selected)			**2**		
1	CKC328	Mold Machining (**)	2(0,2,1)	CKC327(a)	
2	CKC331	Multi Axis CNC Machining (**)	2(0,2,1)	CKC318(a)	
	Total		**100**		

Note:

City of Glasgow College will supply all course and assessment materials for the 5 modules in English. Each module has 31 sessions and it will be delivered by Ly Tu Trong College lecturers in Vietnamese. In addition, City of Glasgow College will provide their customised Virtual Learning Environment (MyCity) and E-library resources to those students enrolled for the modules to support their study.

5. Instructions for using the program:

5.1. Guidelines for determining content and time for extracurricular activities:

- In order for students to have full awareness of the profession they are studying, the school arranges for students to visit some production and business establishments suitable to the training profession;
- Time for extracurricular activities is arranged outside of the formal training time at an appropriate time.

5.2. Instructions to test the end of the subject:

Comply with the Regulation on organizing the implementation of training programs at intermediate level and college level by mode of credit accumulation; Regulations on test, examination and graduation recognition at Ly Tu Trong College of Ho Chi Minh City, issued together with Decision No. 713 / QD-LTT-DT dated July 19, 2017 of the Rector of Ly Tu Trong College of Ho Chi Minh City is amended and supplemented some articles according to Decision No. 696 / QD-LTT-ĐT dated June 26, 2019 by the Rector of Ly Tu Trong College of Ho Chi Minh City.

5.3. Graduation accreditation review guide:

Graduation recognition consideration shall comply with the Regulation on organizing the implementation of training programs at intermediate level and college level according to the mode of credit accumulation; Regulations on test, examination and graduation recognition at Ly Tu Trong College of Ho Chi Minh City, issued together with Decision No. 713 / QD-LTT-DT dated July 19, 2017 of the Rector of Ly Tu Trong College of Ho Chi Minh City is amended and supplemented some articles according to Decision No. 696 / QD-LTT-ĐT dated June 26, 2019 by the Rector of Ly Tu Trong College of Ho Chi Minh City.

Based on the proposal of the Graduation Examination Council, the Rector signs the decision to recognize the graduation and issue the diploma of the College for students who are eligible to graduate.

5.4. Other notes

Subjects Physical Education, Security and Defense Education, Soft Skills are not included in the general academic grade, but are prerequisites to consider completing the learning volume, graduation exam event and graduation recognition.

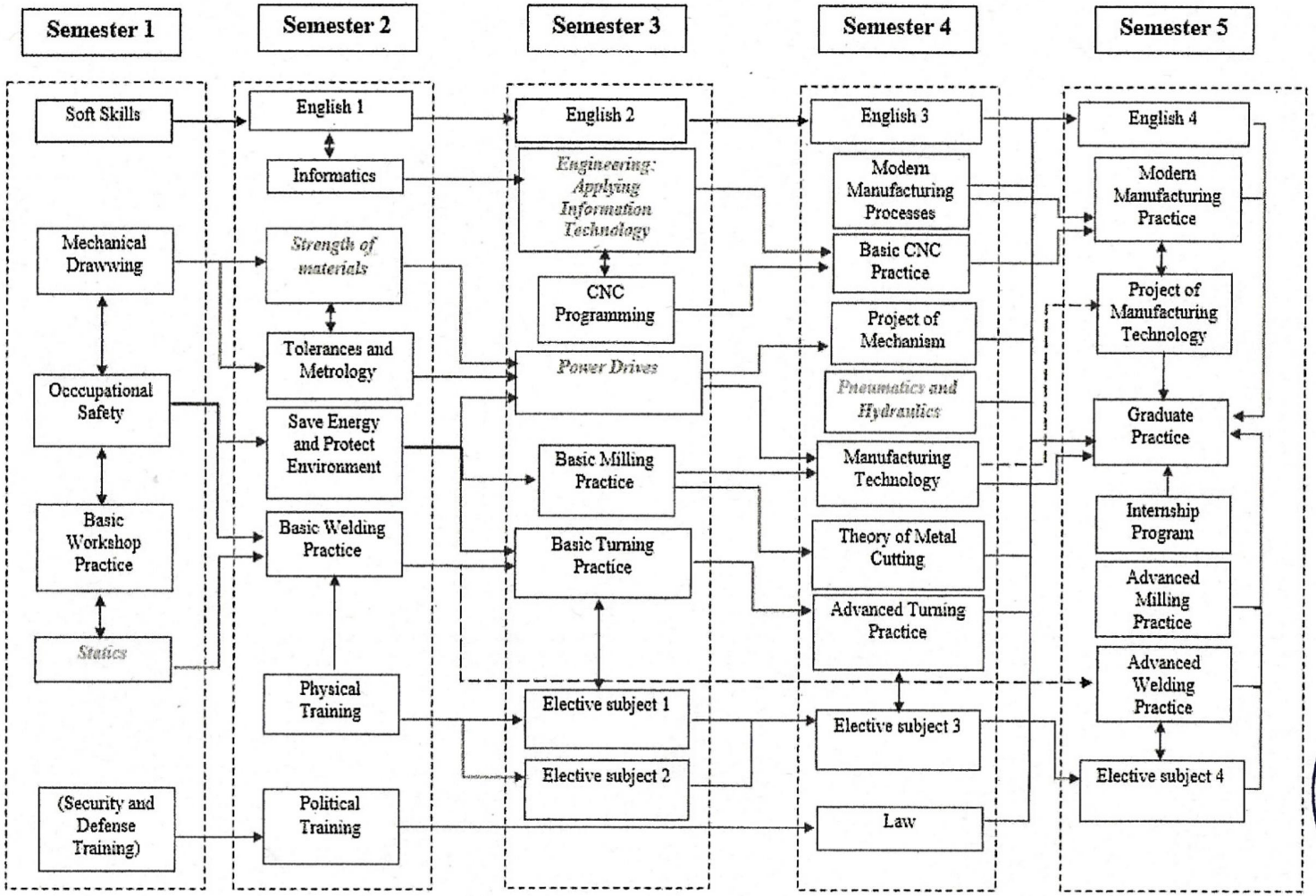
The Internship Program course is not included in the total number of credits in the program. Depending on the expertise of each profession, the Dean (of faculty) can choose one of the following forms to perform:

- Internship in Enterprises.
- Internship at specialized workshops or Affiliated Business Centers located at Ly Tu Trong College of Ho Chi Minh City.
- Join specialized clubs in the faculty.
- Implement models and projects deployed by the faculty.
- The subjects marked with (**) will be trained at the Enterprise.

TRAINING PROGRAM CHART

Name of business: Mechanical Engineering Technology

Code of business: 6510201



BRIEF DESCRIPTION OF CITY OF GLASGOW COLLEGE SUBJECTS:

Statics

Designed to provide Learners with basic knowledge and understanding of Statics. During the delivery of the Module Learners will learn to differentiate between scalar and vector quantities and identify the properties and effects of the application of force on a body, component and structure. They will also develop the knowledge and skills to solve problems involving forces in a plane as well as being able to analyse simple, idealised frameworks. Learners will also learn to determine the effects of force on simple components. This Module is suitable for Learners training to be mechanical or multi-disciplinary engineering technicians

Strength of Materials

Largely theory based Module is designed to provide Learners with basic knowledge and understanding of Strength of Materials in an engineering context. During Module delivery, Learners will learn to use shear force and bending moment diagrams to solve problems involving simply supported beams and cantilevers. They will also develop the knowledge and understanding to apply simple bending theory to idealised beams and apply simple torsion theory to solve problems involving shafts of circular cross-sectional area. This Module is suitable for Learners training to be mechanical or multi-disciplinary engineering technicians.

Engineering: Applying Information Technology

Provide knowledge and expertise on features of an operating system and available software application packages, including software packages relevant to an engineering environment. The students will gain practical experience in the use of the features in these types of software, and in the development of internet search techniques. The Module will also provide students with information regarding the selection of appropriate software for specific tasks

Power Drives

Designed to allow Learners to develop their knowledge and understanding in mechanical power transmission drives. During delivery of the Module Learners will develop the knowledge and understanding to explain the features and terms associated with power transmission drives. They will also learn to evaluate power transmission products and match such products to given applications. Learners will also develop the knowledge and understanding to design a mechanical power drive and create a parts list to realize their design. They will also develop the knowledge and understanding of methods used to check installed mechanical power drives for installation and developed faults. This Module is suitable for Learners training to be mechanical or multi-disciplinary engineering technicians.

Pneumatics and Hydraulics

Designed to provide Learners with knowledge, understanding and skills of pneumatic and hydraulic circuits. During delivery of the Module Learners will learn how to interpret pneumatic and hydraulic components and component symbols and describe the operation of fluid power components. They

Learners will also learn how to design, assemble and test pneumatic or hydraulic circuits as well as developing the knowledge and skills to perform basic fault finding techniques on pneumatic or hydraulic circuits and rectify faults. Learners will develop practical skills and safe working practices whilst assembling and testing pneumatic or hydraulic systems. This Module is suitable for Learners training to be maintenance, mechanical or multi-disciplinary engineering technicians.