

MINISTRY OF EDUCATION & TRAINING
HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY & EDUCATION

UNDERGRADUATE PROGRAM
Major of
AUTOMOTIVE ENGINEERING TECHNOLOGY

(Issued under Decision No. 3744 /QĐ-ĐHSPKT dated 06 / 10 /2025 by the President of Ho Chi Minh City University of Technology and Education)

Education Program: Automotive Engineering Technology

Level: Undergraduate

Major: Automotive Engineering Technology

Major Code: 7510205A

Ho Chi Minh City, 2025

UNDERGRADUATE PROGRAM

Education Program: Automotive Engineering Technology

Level: Undergraduate

Major: Automotive Engineering Technology

Major Code: 7510205A

Type of Training: FULL-TIME

Graduation Diploma: ENGINEER

(Issued under Decision No. 3744 /QĐ-ĐHSPKT dated 06 / 10 /2025 by the President of Ho Chi Minh City University of Technology and Education)

1. Training Duration: 4 years

2. Admission Requirements: High School Graduate

3. Grading Scale, Training Process, and Graduation Requirements

- Grading Scale: 10
- Training Process: According to Decision No. 3116/QĐ-ĐHSPKT dated 22/08/2025 of Ho Chi Minh City University of Technology and Education on promulgating the university-level training regulations.
- Graduation Requirements:
 - General Requirements: According to Decision No. 3116/QĐ-ĐHSPKT dated 22/08/2025 of Ho Chi Minh City University of Technology and Education on promulgating the university-level training regulations.
 - Specialized Requirements: According to the general regulations of Ho Chi Minh City University of Technology and Education.

4. Training Goals and Learning Outcomes

Goals:

Graduates will be able to grasp natural and social principles and laws; possess fundamental practical skills; have political and ethical qualities; be capable of independent and creative work and solving problems in the automotive engineering technology field; be able to pursue further education; have good health; demonstrate professional responsibility, meeting societal demands; and have a sense of serving the people, contributing to socio-economic development, ensuring national defense, security, and international integration.

Objectives: Graduates will possess the following knowledge, skills, and competencies:

1. Possess technical knowledge and reasoning.
2. Develop the capacity for knowledge exploration, systemic thinking, and solving specialized problems in automotive engineering technology.
3. Possess effective working skills.

4. Develop skills in idea generation, design, implementation, and operation of systems in the field of automotive engineering technology, relevant to societal needs.

Program outcomes

Code	Expected Learning Outcomes	Competency Level
ELO1	Able to identify, calculate, and solve technical problems in the field of Automotive Engineering Technology by applying natural, scientific, and engineering principles.	4
ELO2	Able to experiment, analyze, synthesize, and evaluate data to draw appropriate conclusions in the field of Automotive Engineering Technology.	4
ELO3	Able to recognize the ethical and professional responsibilities of an engineer; propose reasonable solutions that consider the impact of these solutions in a global, economic, environmental, and societal context.	4
ELO4	Able to recognize the need for and engage in lifelong learning.	3
ELO5	Able to work effectively in a team , with members leading collaboratively, creating a cooperative and inclusive environment, setting goals, planning tasks, and meeting objectives.	4
ELO6	Able to communicate effectively with various audiences and communicate in English.	4
ELO7	Able to formulate ideas and design technical solutions in the field of Automotive Engineering Technology that meet societal needs.	5
ELO8	Able to deploy technical systems in the field of Automotive Engineering Technology.	4
ELO9	Able to operate and manage technical systems in the field of Automotive Engineering Technology.	4

Competency Level Scale

Competency Level	Description
0.0 ≤ Competency Level ≤ 1.0: Basic	Remember: Students recall/recognize/retrieve knowledge through actions such as defining, repeating, listing, identifying, determining, etc.
1.0 ≤ Competency	Understand: Students construct knowledge from materials and existing knowledge through actions such as explaining, classifying, illustrating, inferring, etc.

Level $\leq$ 2.0: Satisfactory	
2.0 $\leq$ Competency Level $\leq$ 3.0: Apply	Students perform/apply knowledge to create products such as models, physical objects, simulated products, reports, etc.
3.0 $\leq$ Competency Level $\leq$ 4.0: Proficient	Analyze: Students analyze materials/knowledge into details/components and point out their relationships within the whole through actions such as analyzing, classifying, comparing, synthesizing, etc.
4.0 $\leq$ Competency Level $\leq$ 5.0: Evaluate	Students provide assessments and predictions about knowledge/information according to predefined standards, criteria, and measurement indicators through actions such as commenting, critiquing, proposing, etc.
5.0 $\leq$ Competency Level $\leq$ 6.0: Excellent	Create: Students construct/arrange/organize/design/generalize details/components in a different/new way to create new structures/models/products.

5. Total program credits: 158 credits

(not including physical, national defense education and Enterprise Seminar)

Foreign Language Knowledge:

- Students with an IELTS $\geq$ 4.5 or equivalent (as per Decisions No. 3239/QĐ-ĐHSPKT dated 03/09/2025) will be exempted from the English placement test. Their scores will be converted for English courses in the program and English proficiency requirement (Outcome).
- English Placement Test for Level Classification: Students without IELTS certificate must participate in an English placement test to determine their proficiency level.
 - If a student achieves Level 1, they will study Communicative English 1,2.
 - If a student achieves Level 2, they will study Academic English 1,2.
- Sequence of English courses: Communicative English 1,2 $\rightarrow$ Academic English 1, 2 $\rightarrow$ English for Thesis Writing.

Note:

Communicative English 1 and 2 are supplementary courses designed to enhance English communication skills for students not accumulating credits in the program.

- Academic English 1 and 2 are academic courses that accumulate credits in the program.

6. Allocation of Knowledge Group

Groups of Courses	Credits		
	Total	Compulsory	Elective

General Knowledge	60	50	10
General Politics + Laws	14	14	
Social Sciences and Humanities	4		4
English	8	8	
Mathematics and Natural Sciences	28	22	6
Technical Computer Sciences	3	3	
Introduction to Automotive Engineering Technology	3	3	
Specialized Knowledge	98	83	15
Foundation Knowledge	25	23	2
Specialized Knowledge	36	31	6
Interdisciplinary	5		5
Practices	19	17	2
Internship	2	2	
Graduation Thesis	10	10	
Physical and National Defense Education	Non-accumulation		
<i>National Defence Education 1</i>	1		
<i>National Defence Education 2</i>	1		
<i>National Defence Education 3</i>	1		
<i>National Defence Education 4</i>	1		
<i>Physical Education 1</i>	1		
<i>Physical Education 2,3</i>	2		
Communicative English	Non-accumulation		
Communicative English 1	4		
Communicative English 2	4		
Enterprise Seminar	1		
Total	158	133	25

7. Content of Program

A – Compulsory Courses

7.1. General Knowledge

No.	Course's ID	Course name	Credits	Prerequisite
1.	LLCT130105E	Philosophy of Marxism and Leninism	3	
2.	LLCT120205E	Political economics of Marxism and Leninism	2	
3.	LLCT120405E	Scientific socialism	2	
4.	LLCT220514E	History of Vietnamese communist party	2	
5.	LLCT120314E	Ho Chi Minh's ideology	2	
6.	GELA 236939E	General Law	3	
7.	MATH132401E	Calculus 1	3	
8.	MATH132501E	Calculus 2	3	
9.	MATH132601E	Calculus 3	3	
10.	MATH132901E	Mathematical Statistics for Engineers	3	
11.	PHYS130902E	Physics 1	3	
12.	PHYS131002E	Physics 2	3	
13.	PHYS111202E	Physics - Laboratory 1	1	
14.	GCHE130603E	Chemistry for Engineers	3	
15.	CPRL130064E	C Programming	3	
16.	INAT130130E	Introduction to Automotive Technology	3 (2+1)	
17.	ACEN340535E	Academic English 1	4	
18.	ACEN340635E	Academic English 2	4	
19.	ENTW621038E	English for Thesis Writing	2	
20.	COEN140135E	Communicative English 1	4	Non-accumulation
21.	COEN140235E	Communicative English 2	4	Non-accumulation
22.	GDQP110131	Giáo dục quốc phòng 1 (<i>National Defence Education 1</i>)	1	Non-accumulation
23.	GDQP110231	Giáo dục quốc phòng 2 (<i>National Defence Education 2</i>)	1	Non-accumulation

24.	GDQP110331	Giáo dục quốc phòng (<i>National Defence Education 3</i>)	1	Non-accumulation
25.	GDQP110431	Giáo dục quốc phòng 4 (<i>National Defence Education 4</i>)	1	Non-accumulation
26.	PHED110130	Giáo dục thể chất 1 (<i>Physical Education 1</i>)	1	Non-accumulation
27.	Giáo dục thể chất 2,3 (<i>Physical Education 2,3</i>)		2	Choose 2
28.	FOOT112330	Bóng đá (<i>Football</i>)	1	Non-accumulation
29.	VOLL112330	Bóng chuyền (<i>Volleyball</i>)	1	Non-accumulation
30.	BASK112330	Bóng rổ (<i>Basketball</i>)	1	Non-accumulation
31.	BADM112330	Cầu lông (<i>Badminton</i>)	1	Non-accumulation
32.	TENN112330	Quần vợt (<i>Tennis</i>)	1	Non-accumulation
33.	KARA112330	Không thủ đạo (<i>Karate</i>)	1	Non-accumulation
34.	CHES112330	Cờ vua (<i>Chess</i>)	1	Non-accumulation
35.	CHIN112330	Cờ tướng (<i>Chinese Chess</i>)	1	Non-accumulation
36.	YOGA112330	Yoga (<i>Yoga</i>)	1	Non-accumulation
37.	PICK112330	Pickleball	1	Non-accumulation
Total			52	

7.2. Specialized Knowledge

7.2.1. Foundation Knowledge

No.	Course's ID	Course name	Credits	Prerequisite
1.	THME230721E	Theoretical Mechanics	3	
2.	STMA230521E	Strength of Materials	3	THME230721E

3.	TEDG130120E	Technical drawing - Basic course	3	
4.	TOMT220225E	Measuring Techniques & Tolerances	2	
5.	EEEN234062E	Electrical and Electronic Engineering	3	
6.	THER222932E	Thermal Engineering	2	
7.	MMCD230323E	Mechanisms and Machine Components Design	3	
8.	AMIC330133E	Application of Microcontroller	3	
9.	MHAP110127E	Mechanical Works Practice	1	
Total			23	

7.2.2.a Specialized Knowledge Courses (Theory and Practice courses)

– Compulsory subjects

No.	Course's ID	Course name	Credits	Prerequisite
1.	ICEP330330E	Internal Combustion Engine Principles	3	THER222932
2.	THEV330131E	Theory of Vehicles	3	
3.	ICEC320430E	Internal Combustion Engine Calculation	2	ICEP330330E
4.	VEDE330631E	Vehicle Design	3	THEV330131E
5.	AEVE320830E	Alternative Energies for Vehicles	2	
6.	AEES330233E	Automotive Electrical and Electronic Systems	3	
7.	VACS330333E	Vehicle Automatic Control Systems	3	AEES330233E
8.	ASMA220230E	Automotive Service Management	2	
9.	EVTE330633E	Electric and Hybrid Vehicle Technology	3	
10.	ASCS330433E	Automotive Safety and Convenience Systems	3	
11.	TOET320630E	Theory of Engine Testing	2	
Total			29	

7.2.2.b Specialized Knowledge

No.	Course's ID	Course name	Credits	Prerequisite
1.	SEMI310026E	Enterprise Seminar	1	Non-accumulation

7.2.2.c Major Practices

No.	Course's ID	Course name	Credits	Prerequisite
2.	PICE331030E	Practice of Internal Combustion Engine	3	
3.	PEMS331130E	Practice of Engine Management	3	
4.	PAES321133E	Practice of Automotive Electrical Systems	2	
5.	PABE331233E	Practice of Automotive Body Electrical systems	3	
6.	PAPS331131E	Practice of Automotive Powertrains System	3	
7.	PACS331231E	Practice of Automotive Chassis System	3	
Total			17	

7.2.3. Internship and Graduation Thesis

No.	Course's ID	Course name	Credits	Prerequisite
1.	PRGR423130	Practice of Graduation	2	
2.	GRTH402030	Graduation Thesis	10	
Total			12	

B – Optional Subjects

Knowledge of Social Sciences and Humanities: 4 Credits (*Choose 2 courses*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	GEFC220105E	General Economics	2	Choose 1
2.	IQMA220205E	Introduction to Quality Management	2	
3.	INMA220305E	Introduction of Management	2	
4.	INLO220405E	Introduction to Logic	2	
5.	BPLA121808E	Business Plan	2	
6.	ENPS220591E	Engineering Psychology	2	Choose 1
7.	SYTH220491E	System Thinking	2	

8.	PLSK120290E	Planning Skills	2	
9.	WOPS120390E	Workplace Skills	2	
10.	REME320690E	Research Method	2	
11.	Total		4	

Mathematics and Natural Sciences: 6 Credits (*Choose 2 courses*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	MATH133101E	Higher Mathematics for Engineers 1	3	Choose 2
2.	MATH133201E	Higher Mathematics for Engineers 2	3	
3.	PHYS131102E	Principles of Physics 3	3	
4.		Total	3	

Foundation Knowledge: 2 Credits (*Choose 1 course*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	FMMT320825E	Fundamentals of Machine Manufacturing Technology	2	Choose 1
2.	PHEQ220332E	Hydraulic Machines	2	
3.	METE320126E	Metal Technology	2	
4.	FLUI220132E	Fluid Mechanics (FME)	2	
5.		Total	2	

Specialized Knowledge: 6Credits (*Choose 3 courses*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	CAES320530E	Application of computer (EN)	2 (1+1)	Choose 1
2.	CADS320531E	Application of computer (CH)	2 (1+1)	
3.	CAMC320533E	Application of computer (EL)	2 (1+1)	
4.	SPAE310730E	Special Project (EN)	1	Choose 2
5.	SPAC312131E	Special Project (CH)	1	
6.	SPAE310733E	Special Project (EL)	1	
7.	AAMT320830E	Automotive Assembly and Manufacturing Technology	2	Choose 1
8.	ADRT320331E	Automotive Diagnostic and Repair Techniques	2	

9.	AVIN320431E	Automotive Vibration and Noise	2	
10.		Total	6	

Interdisciplinary: 5 Credits (*Choose 2 courses*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	IMAS320525E	Maintenance in Industry	2	Choose 1
2.	AUMP323525E	Automation of Manufacturing Process	2	
3.	ERMA326032E	Energy Source and Energy Management	2	
4.	MEVI220820E	Mechanical Vibrations	2	
5.	PNHY230529E	Pneumatic & Hydraulic Technology	3	Choose 1
6.	MQMA331326E	Managing production and quality	3	
7.	DEIP331225E	Designing of industrial products	3 (2+1)	
8.	AUCO330329E	Automatic Control	3	
9.	INPY131685E	Introduction to Python Programming	3 (2+1)	
10.		Total	5	

Practice Courses: 2 Credits (*Choose 1 course*)

No.	Course's ID	Course name	Credits	Prerequisite
1.	POAD321230E	Practice of Automotive Diagnostics	2	Choose 1
2.	PABP321331E	Practice of Automotive Body and Paint	2	
3.	PAUP321333E	Practice of Automotive Programming	2	
4.	PEHV321433E	Practice of Electric and Hybrid Vehicle	2	
5.		Total	2	

C – MOOCs (Massive Open Online Courses):

To facilitate enhanced access to advanced training programs, students can independently choose proposed online courses from the following table to be considered equivalent to courses in the curriculum:

No.	Course's ID	Course name	Credits	Course eligible for MOOC equivalency (registration link provided)
1.	INAT130130E	Introduction to Automotive Technology	3 (2+1)	ASU, 2 credits, 16 weeks, https://gfa.asu.edu/courses/online-engineering-course
2.	ERMA626032E	Energy and Energy Management	3	ASU, 4 credits, 8 weeks, https://gfa.asu.edu/courses/introduction-solar-systems-astronomy
3.	VACS330333E	Vehicle Automatic Control Systems	3	Harvard, 9 problem sets (10 to 20 hours each), https://www.edx.org/course/cs50s-introduction-computer-science-harvardx-cs50x
4.	THER222932E	Thermal Engineering	2	University of Michigan, 8 weeks, https://www.mooc-list.com/course/introduction-thermodynamics-transferring-energy-here-there-coursera
5.	THEV330131E	Theory of Vehicles	3	Helmut-Schmidt-Universität - Universität der Bundeswehr Hamburg, 14 weeks, 2-3 hours/week https://www.mooc-list.com/course/vehicle-dynamics-i-accelerating-and-braking-iversity

8. Training plan

1st Semester

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	GELA 236939E	General Law	3		1
2.	INAT130130E	Introduction to Automotive Technology	3	3 (2+1)	1
3.	MATH132401E	Calculus 1	3		2
4.	PHYS130902E	Physics 1	3		2
5.	GCHE130603E	General Chemistry for Engineers	3		2

6.	CPRL130064E	C Programming	3		2
7.	PHED110130	Giáo dục thể chất 1 (<i>Physical Education 1</i>)	0	Non- accumulation	1
8.	ACEN340535E	Academic English 1	4		1
9.	ACEN340635E	Academic English 2	4		1
Total			26		

2nd Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	LLCT130105E	Philosophy of Marxism and Leninism	3		1
2.	MATH132501E	Calculus 2	3		1
3.	PHYS131002E	Physics 2	3		1
4.	PHYS111202E	Physics - Laboratory 1	1		1
5.	THME230721E	Theoretical Mechanics	3		2
6.	TEDG130120E	Technical drawing - Basic course	3		2
7.	TOMT220225E	Measuring Techniques & Tolerances	2		2
8.	MHAP110127E	Mechanical Works Practice	1		2
9.	Social Sciences and Humanities (1) (Elective 1)		2		1
10.		Giáo dục thể chất 2 (tự chọn 1) <i>Physical Education 2 (Elective1)</i>	1	Non- accumulation	
11.		Giáo dục Quốc phòng <i>National Defence Education</i>	4	Non- accumulation	
12.					
Total			21		

3rd Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	LLCT120205E	Political Economics of Marxism and Leninism	2		1

2.	LLCT120405E	Scientific socialism	2		2
3.	MATH132601E	Calculus 3	3		1
4.	MATH132901E	Mathematical Statistics for Engineers	3		1
5.	STMA230521E	Strength of Materials	3	THME230721	1
6.	THER222932E	Thermal Engineering	2		2
7.	EEEN234062E	Electrical and Electronic Engineering	3		2
8.	MMCD230323E	Mechanisms and Machine Components Design	3		1
9.	Mathematics and Natural Sciences (1) (option)		3		2
10.	Social Sciences and Humanities (2) (option)		2		1
11.	Giáo dục thể chất 3 (tự chọn 2) <i>Physical Education 3 (Elective 2)</i>		1	Non-accumulation	2
Total			26		

4th Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	LLCT120314E	Ho Chi Minh's ideology	2		1
2.	LLCT220514E	History of Vietnamese communist party	2		2
3.	AMIC330133E	Application of Microcontroller	3		2
4.	ICEP330330E	Internal Combustion Engine Principles	3		1
5.	THEV330131E	Theory of Vehicles	3		2
6.	AEVE320830E	Alternative Energies for Vehicles	2		2
7.	AEES330233E	Automotive Electrical and Electronic Systems	3		1
8.	Mathematics and Natural Sciences (2) (option)		3		1

9.	Foundation major optional (Choose 1)				
10.	FMMT320825E	Fundamentals of Machine Manufacturing Technology	2	Choose 1	1
11.	PHEQ220332E	Hydraulic Machines	2		
12.	METE320126E	Metal Technology	2		
13.	FLUI220132E	Applied Fluid Mechanics (FME)	2		
Total			23		

5th Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	ICEC320430E	Internal Combustion Engine Calculation	2	ICEP330330E	1
2.	VEDE330631E	Vehicle Design	3	THEV330131E	2
3.	ASCS330433E	Automotive Safety and Convenience Systems	3		2
4.	EVTE330633E	Electric and Hybrid Vehicle Technology	3		1
5.	ENTW621038E	English for Thesis Writing	2		2
6.	PICE331030E	Practice of Internal Combustion Engine	3	ICEP330330	1
7.	PAPS331131E	Practice of Automotive Powertrains System	3		1
8.	PAES321133E	Practice of Automotive Electrical Systems	2	AEES330233E	2
9.	Interdisciplinary 1 (option 1)				
10.	IMAS320525E	Maintenance in Industry	2		Choose 1
11.	AUMP323525E	Automation of Manufacturing Process	2		
12.	ERMA326032E	Energy Source and Energy Management	2		
13.	MEVI220820E	Mechanical Vibrations	2		
Total			23		

6th Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	PEMS331130E	Practice of Engine Management	3		1
2.	PACS331231E	Practice of Automotive Chassis System	3		2
3.	PABE331233E	Practice of Automotive Body Electrical systems	3		2
4.	ASMA220230E	Automotive Service Management	2		1
5.	TOET320630E	Theory of Engine Testing	2		1
6.	VACS330333E	Vehicle Automatic Control Systems	3	AEES330233	2
7.	AAMT320830E	Automotive Assembly and Manufacturing Technology	2	Choose 1	
8.	ADRT320331E	Automotive Diagnosis and Repair Techniques	2		
9.	AVIN320431E	Automotive Vibration and Noise	2		
10.	CAES320530E	Application of computer (EN)	2 (1+1)	Choose 1	1
11.	CADS320531E	Application of computer (CH)	2 (1+1)		
12.	CAMC320533E	Application of computer (EL)	2 (1+1)		
13.	SPAE310730E	Special Project (EN)	1	Choose 2	1
14.	SPAC312131E	Special Project (CH)	1		
15.	SPAE310733E	Special Project (EL)	1		
16.	Interdisciplinary 2 (Elective 2)				
17.	PNHY230529E	Pneumatic & Hydraulic Technology	3	Choose 1	2
18.	MQMA331326E	Managing production and quality	3		

19.	DEIP331225E	Designing of industrial products	3 (2+1)		
20.	AUCO330329E	Automatic Control	3		
21.	INPY131685E	Introduction to Python Programming	3 (2+1)		
Total			25		

7th Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	SEMI310026E	Enterprise Seminar	1	Non-accumulation	2
2.	PRGR422130E	Practice of Graduation	2		2
3.	POAD321230E	Practice of Automotive Diagnostics	2	Choose 1	1
4.	PABP321331E	Practice of Automotive Body and Paint	2		
5.	PAUP321333E	Practice of Automotive Programming	2		
6.	PEHV321433E	Practice of Electric and Hybrid Vehicle	2		
Total			4		

8th Semester:

No.	Course's ID	Course name	Credits	Prerequisite	Term 1/2
1.	GRTH402030E	Graduation Thesis	10		1,2
Total			10		

10. Course Descriptions

1. Academic English 1

Credits: 4

Prerequisite course(s): Communicative English 1

Corequisite course(s): Academic English 2

Previous course(s): N/A

Course Description:

This is the first course of the Academic English series designed for students majoring in the areas other than English to achieve the intermediate level of English language proficiency (equivalent to B2.1 level of CEFR) in Speaking and Listening skills. The series aims to enhance students' English competence to deal with complex matters of everyday life in other countries, to exchange specific information and personal ideas with young people and adults who speak English, and to achieve a wider understanding of thoughts from people of other cultures. This course particularly provides students with the opportunities to understand the

main ideas of complex oral English on quite abstract topics, including basic technical discussions in their fields of specialization. Students are asked to orally interact with a degree of fluency that makes regular interactions with native English speakers quite possible with some strain. They are also prepared to orally produce clear, detailed texts on a limited range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of a few options. In addition, this course promotes students' development of presentation skills, teamwork ability, and learner autonomy by engaging them in various interactive activities.

Textbooks:

Kisslinger, E., & Baker, L. (2024). *Skillful 3 Listening and Speaking* (3rd ed.). Macmillan Education.

2. Academic English 2

Credits: 4

Prerequisite course(s): Communicative English 2

Corequisite course(s): Academic English 1

Previous course(s): N/A

Course Description:

This is the second course of the Academic English series designed for students majoring in the areas other than English to achieve the intermediate level of English language proficiency (equivalent to B2.1 level of CEFR) in Reading and Writing skills. The series aims to enhance students' English competence to deal with complex matters of everyday life in other countries, to exchange specific information and personal ideas with young people and adults who speak English, and to achieve a wider understanding of thoughts from people of other cultures. This course particularly provides students with the opportunities to understand the main ideas of complex English texts on quite abstract topics, including basic technical discussions in their fields of specialization. Students are asked to interact in written English with a degree of fluency that makes regular interactions with native English speakers quite possible with some strain. They are also prepared to produce clear, detailed written texts on a limited range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of a few options. In addition, this course promotes students' development of presentation skills, teamwork ability, and learner autonomy by engaging them in various interactive activities.

Textbooks:

Rogers, L., & Zemach, D. E. (2024). *Skillful 3 Reading and Writing* (3rd ed.). Macmillan Education.

3. Philosophy of Marxism-Leninism

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: None

Course Summary:

This course provides a brief introduction to Marxism-Leninism and general concepts related to the subject. It covers the fundamental principles of the Marxist-Leninist worldview and philosophical methodology.

4. Political economics of Marxism and Leninism

Credits: 2

Learning Time Allocation: 2/0/4

Prerequisite Courses: None

Prior Courses: None

Course Summary:

This course focuses on the economic theories of Marxism-Leninism, particularly on the capitalist mode of production.

5. Scientific Socialism

Credits: 2

Learning Time Allocation: 2/0/4

Prerequisite Courses: Political economics of Marxism and Leninism, Philosophy of Marxism-Leninism

Prior Courses: None

Course Summary:

This course covers fundamental theoretical aspects of Marxism-Leninism on socialism, including the concept of scientific socialism, real-world socialism, and its future prospects.

6. History of Vietnamese Communist Party

Credits: 2

Learning Time Allocation: 2/0/4

Prerequisite Courses: Scientific Socialism

Prior Courses: None

Course Summary:

This course provides fundamental knowledge of the formation and development of the Communist Party of Vietnam. It systematically covers the Party's policies, especially during the renovation period, across key areas of society. Topics include the establishment of the Communist Party of Vietnam, its first political platform, policies during the struggle for independence (1930-1945), resistance wars against French colonialists and American imperialists (1945-1975), industrialization strategies, socialist-oriented market economy development, political system building, cultural policies, social issues, and foreign relations.

7. Ho Chi Minh's Ideology

Credits: 2

Learning Time Allocation: 2/0/4

Prerequisite Courses: History of Vietnamese Communist Party

Prior Courses: None

Course Summary:

In addition to the introductory chapter, the course consists of 7 chapters. Chapter I discusses the foundations, formation process, and development of Ho Chi Minh Thought. From Chapter II to Chapter VII, the course covers the core contents of Ho Chi Minh Thought in line with the objectives of the course.

8. General Law

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: None

Course Summary:

This course provides basic concepts of fundamental theoretical knowledge about the state and law in general, and socialist law and state in particular. It helps students gain a correct understanding and perspective on the policies of the Party and the laws of the state. Additionally, it equips students with basic knowledge of the legal system in Vietnam and specific branches of law, enhancing their understanding of law to apply in practical life.

9. Calculus 1

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: None

Course Summary:

This course covers basic and advanced mathematics knowledge, including set theory: rational numbers, real numbers, complex numbers. Limits: functions, limits of functions, continuous functions. Differential calculus for single-variable functions: derivatives, differentials, Taylor-Maclaurin series, function analysis, curves in polar coordinates. Integral calculus for single-variable functions: indefinite integrals, definite integrals, improper integrals. Series: number series, function series, power series, Taylor-Maclaurin series, Fourier series, Fourier expansion, trigonometric series.

10. Calculus 2

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: Calculus 1

Course Summary:

Matrices and determinants: matrices, types of matrices, inverse matrices, determinants, rank of matrices.

Linear systems: linear systems, Cramer's rule, Gaussian elimination, homogeneous systems.

Vector spaces: vector spaces, subspaces, linear independence, linear dependence, bases, dimension, Euclidean spaces.

Diagonalization of matrices and quadratic forms: eigenvalues, eigenvectors, eigenspaces, matrix diagonalization, quadratic forms, canonical form, quadratic surfaces.

Differential calculus for multivariable functions: multivariable functions, partial derivatives, differentials, extrema of multivariable functions, applications of differential calculus in geometry in space.

11. Calculus 3

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: Calculus 1

Course Summary:

Multiple integrals: double integrals, applications for calculating areas of flat regions, surface areas, volumes of solids, triple integrals, applications for calculating volumes of solids.

Line integrals: line integrals of type one, applications, line integrals of type two, applications, Green's theorem, conditions for path independence in line integrals.

Surface integrals: surface integrals of type one and type two, Ostrogradsky's theorem, vector fields, flux and divergence, vector form of Ostrogradsky's theorem, Stokes' theorem, circulation and vorticity, vector form of Stokes' theorem.

12. Mathematical Statistics for Engineers

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: Calculus 1, Calculus 2

Course Summary:

Basic concepts in probability theory: Counting rules, combinations, permutations, binomial theorem, trials, events, probability, conditional probability.

Random variables: Random variables, probability distributions of random variables, numerical characteristics of random variables: expectation, variance, mode, median.

Common probability distributions: Binomial distribution, Poisson distribution, normal distribution, Student's t-distribution.

Sampling theory: Concepts of population, random sampling, statistics on samples, sampling methods, sample characteristics, distribution of sample statistics, calculating sample statistics.

Estimation theory: Concepts of estimation, point estimation, interval estimation.

Hypothesis testing: Type I and Type II errors, significance level, hypothesis testing for means, hypothesis testing for proportions, testing equality of two means or two proportions, testing for independence.

Correlation and regression: Two-dimensional random variables, correlation coefficient, sample correlation coefficient, experimental correlation table, experimental regression line.

13. Physics 1

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: None

Prior Courses: None

Course Summary:

Mechanics: Kinematics of particles, dynamics of particles, laws of conservation, rigid body motion. Thermodynamics: Molecular kinetic theory, First Law of Thermodynamics, Second Law of Thermodynamics. Electromagnetism: Electric fields, magnetic fields, varying electromagnetic fields.

14. Physics 2

Credits: 3

Learning Time Allocation: 3/0/6

Prerequisite Courses: Physics 1

Prior Courses: Physics 1

Course Summary:

Einstein's Theory of Relativity: Special relativity, general relativity. Optics: Wave optics and phenomena like interference, diffraction of light, quantum optics and photoelectric, Compton effects. Quantum Physics: de Broglie and Heisenberg hypotheses, Schrödinger's equation and particle motion, quantization of physical quantities.

The course includes practical experiments to help students visualize theoretical phenomena. Experiments include: error calculation theory, determining the moment of inertia of a wheel and frictional force of a bearing, determining the gravitational acceleration using a physical pendulum, determining the molecular heat capacity ratio of a gas, investigating the RLC resonance circuit-measuring RLC with an electronic oscilloscope, studying the properties of diodes and transistors, determining the electron charge-to-mass ratio using the magnetron method, studying laser diffraction through a flat diffraction grating, determining the wavelength of a laser, studying thermal radiation-verifying the Stefan-Boltzmann law, studying the photoelectric effect - determining Planck's constant.

15. Physics - Laboratory 1

Credits: 1

Learning Time Allocation: 1 (0, 1, 4)

Prerequisite Courses: Physics 1

Prior Courses: Physics 1

Course Summary:

This course consists of 9 experiments covering principles of mechanics, particle dynamics, and rigid body dynamics. It supplements knowledge for students in the technology field at both the associate and undergraduate levels, providing insight into the nature of physical phenomena in nature and validating physical theories learned in the curriculum. It helps future engineers develop skills in observation, conducting experiments, measuring, calculating, analyzing, and processing data.

16. Physics - Laboratory 2

Credits: 1

Learning Time Allocation: 1 (0, 1, 4)

Prerequisite Courses: Physics 2

Prior Courses: Physics 2

Course Summary:

This course includes 9 experiments on electromagnetism and optics. It supplements knowledge for students in the technology field at both the associate and undergraduate levels, providing insight into the nature of physical phenomena in nature and validating physical theories learned in the curriculum. It helps future engineers develop skills in observation, conducting experiments, measuring, calculating, analyzing, and processing data.

17. General Chemistry for Engineers

Credits: 3

Learning Time Allocation: 3 (3, 0, 6)

Prerequisite Courses: None

Course Summary:

This course equips students with basic chemistry knowledge, laying the foundation for understanding related scientific and technical fields. It enables students to (i) understand the

nature of atoms and molecules, thereby explaining the properties of matter; (ii) develop the ability to solve basic quantitative problems related to thermodynamics, reaction kinetics, chemical equilibrium, solution properties, and electrochemical processes.

This course serves as the foundation for students to acquire essential knowledge of the physical world around them and recognize the connections between chemistry and engineering disciplines. Additionally, this course prepares students for higher education or second-degree university programs.

18. C Programming Language

Credits: 3

Prerequisites: None

Course Description:

This course provides an introduction to computing and program development in the C programming language. This includes a brief introduction to basic computer concepts, studying the syntax and semantics of the basic control structures of C, learning C's fundamental data types, structures, and pointer, understanding the design and methodical construction of computer programs, learning how to test and debug programs, and applying the theory in practice by creating several programs in C.

19. Introduction to Automotive Engineering Technology

Credits: 3

Prerequisites: None

Course Description:

This course is designed to help first-year students to get familiar with the new academic environment and successfully advance on the path of becoming engineers. It also prepares students with career orientations and soft skills development, while instilling in them a sense of professional ethics.

20. Theoretical Mechanics

Credits: 3

Prerequisites: None

Course Description:

This course provides fundamental knowledge of mechanical engineering. In this course, the following topics will be covered: *statics* (statics axioms, force, connection, reaction, system analysis); *kinematics* (study the motion of points, objects, translation and rotation, kinematic analysis); and *dynamics* (physical laws, theorems of dynamics, D’Alambert principles, Lagrange equations).

21. Strength of Materials

Credits: 3

Prerequisites: None

Course Description:

This course introduces students to fundamental knowledge of materials strength, methods of calculating the stress, strain in mechanical components, structural members under loading, its load capacity, and deformations.

- 1) Beer, Ferdinand P., and E. Russell Johnston. *Mechanics of Materials*. McGraw-Hill, 1992.
- 2) Hibbeler, Russell C. *Mechanics of Materials*. 9th ed., Prentice Hall, 2013.

22. Technical drawing - Basic course

Credits: 3

Prerequisites: None

Course Description:

This course provides students with the fundamental theory of engineering drawing, including the engineering drawing standards, the basic drawing skills and principles, the methods of representation and orthographic projection. It also cultivates the abilities of writing and reading the engineering drawing.

23. Measuring Techniques & Tolerances

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with fundamental knowledge about tolerance and assembly of common joints in machine manufacturing industry, such as smooth cylindrical joints, key joints, flower joints, threaded joints, methods of solving size sequence problems, and basic principles for recording dimensions on detailed drawings, some types of measuring instruments, and methods of measuring the basic parameters of the parts.

24. Electrical and Electronic Engineering

Credits: 3

Prerequisites: None

Course Description:

This course equips students with knowledge of electrical circuits, circuit design, 1-phase, and 3-phase AC circuits. The students will also be introduced to working principles and calculation methods of current regulator, synchronous motor, asynchronous motor, DC motor, as well as working principles and calculation methods of basic electrical and electronic components such as a diode, transistor BJT, MOSFET, SCR, TRIAC, Opamp.

25. Thermal Engineering

Credits: 2

Prerequisites: None

Course Description:

This course provides students with some basic concepts of technical thermodynamics, the Laws of 1 and 2, the cycles of labor and consumption, and how to calculate the heat and labor for the cycles. The heat transfer section helps students grasp some related concepts as well as the laws of heat exchange: heat conduction, convection heat transfer, heat radiation. It also introduces students to common thermal instruments such as dryer/dehydrator, steam boiler, or heat exchanger

26. Mechanisms and Machine Components Design

Credits: 3

Prerequisites: None

Course Description:

This course provides the structure, working principle and calculation method of kinematic design and dynamics of the transmission mechanism and motion change, joints, and machine components commonly used in mechanics. By the end of this course, students will have the ability to independently solve the problems of calculation and design of machine parts, which serve as a basis for application in the process of calculating the design and machine details in the following technical Practice.

27. Application of Microcontroller

Credits: 3

Prerequisites: None

Course Description:

This course provides the learner with knowledge about the hardware structure of the microcontroller (internal memories, timers, special functions to be used as interrupts) and how

to program the microcontroller and its scripts for practical application. After completing this course, students will be able to understand the structure of a control processing system, apply the microcontroller for designing a circuit, and program the microcontroller to handle and control peripherals.

28. Fundamentals of Machine Manufacturing Technology

Credits: 3

Prerequisites: None

Course Description:

This course provides the theoretical basis of metal cutting and machining methods, processing accuracy and surface quality of workpieces, influencing factors and remedial directions, selecting the standard and set when processing, features cutting and machining processes on universal, specialized machines, etc.

29. Metal Technology

Credits: 3

Prerequisites: None

Course Description:

This course aims to provide students with basic knowledge of technology and equipment for metal processing by casting, pressure and welding, metal cutting, and embryo methods for cutting.

30. Hydraulic Machines

Credits: 2

Prerequisites: None

Course Description:

This course equips learners with basic knowledge about hydraulic and pneumatic machines, their structure, operating principles, characteristics, the scope of use, common failures, methods of repair and maintenance, maintenance of hydraulic and pneumatic machines such as vane pumps, volumetric pumps, centrifugal fans, axial fans, air compressors. At the same time, the module also provides the opportunity to design, construct, and install a complete pneumatic hydraulic system. Learners will have the ability to safely operate all types of hydraulic machines and hydraulic systems.

31. Fluid Mechanics

Credits: 2

Prerequisites: None

Course Description:

This course provides fundamental knowledge of fluid statics, kinematics and dynamics, and analysis of ideal fluid motion and its practical applications. It includes the following contents: properties of fluid, equilibrium law of static fluid, calculating hydrostatic pressure, the laws of fluid flow and its characteristic parameters without regard to the force, the force acting in the environment fluid flow, laws of force interaction between fluid flow and solid objects, unidirectional fluid motion that flows through a nozzle hole. The course also provides learners with knowledge and skills in calculating, designing, analyzing, evaluating, and consulting the advantages and disadvantages of hydraulic systems for constructions.

1) Munson, Bruce R., et al. *Fundamentals of Fluid Mechanics*. 7th ed., Wiley, 2012.

32. Introduction to Quality Management

Credits: 2

Prerequisites: None

Course Description:

This course provides learners with basic knowledge of governance, including the basic functions of management activities, the impact of the most general environmental factors on the business activities of a company, the most basic guidelines on business cost management, recruitment and management of human resources, strategic management and risk management, to help future managers identify and promptly provide solutions to problems.

33. Introduction to Management

Credits: 2

Prerequisites: None

Course Description:

This course provides learners with basic knowledge of governance, including the most general environmental factors affecting the business and the basic functions of governance in business organizations, including planning, organizing, leading, and testing. The course activities are designed to improve information searching skills, public speaking, and critical thinking.

34. Internal Combustion Engine Principles

Credits: 3

Prerequisites: None

Course Description:

This course provides the learner with the following contents: operating principles of the internal combustion engine, basic physical and chemical processes occurring in the engine, the thermodynamic cycle, ideal and actual work cycle of the engine, the theory of combustion processes, the methods to reduce emissions in the engine, working process in internal combustion engines, the effect factors, the technical and economic standards, and the characteristics of an engine.

35. Theory of Vehicles

Credits: 3

Prerequisites: None

Course Description:

This course provides students with fundamental knowledge of the kinematics, dynamics of vehicles in performances on straight and curved roads, braking dynamics, severability, stability of vehicles, and fuel economy of vehicles. The theoretical conclusions are used as the basis for solving problems such as how to assess tractive properties of a vehicle, use a vehicle effectively in certain conditions, and design and refine new models.

36. Internal Combustion Engine Calculations

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the following contents: kinematics and dynamics of the structural mechanism based on piston - crankshaft - connecting rod in eccentric and concentric structure types, balancing the engine, calculations and testing the strength of materials of the key components of engine, and the details of the subsystems in the internal combustion engine.

37. Vehicle Design

Credits: 3

Prerequisites: None

Course Description:

This course provides students with the knowledge for assessing the quality of automobile dynamics and calculating dynamics for cars.

38. Alternative Energies for Vehicles

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the following contents: kinematics and dynamics of the structural mechanism based on piston - crankshaft - connecting rod in eccentric and concentric structure types, balancing the engine, calculations and testing the strength of materials of the key components of engine, and the details of the subsystems in the internal combustion engine.

39. Automotive Electrical and Electronic Systems

Credits: 3

Prerequisites: None

Course Description:

This course provides students with basic knowledge about the electrical-electronic systems of automotive engines and bodywork systems, diagram, structure, working principle, characteristics, circuit diagram and calculation of separate systems constituting the engine electric network, and vehicle body electrical system, including: starter battery, starter system, load, ignition, programmable control system for engine, anti-theft system, lighting and signaling system, information system, and auxiliary power system.

40. Vehicle Automatic Control Systems

Credits: 3

Prerequisites: None

Course Description:

This course provides students in automotive engineering with basic knowledge about automotive automatic control systems, including diagram, structure, working principle, characteristics, circuit diagram, and calculating the separate systems that comprise the electrical network of automated control systems. Those include specifically: automatic transmission control system, ABS system, airbag system, CCS system.

41. Automobile Service Management

Credits: 2

Prerequisites: None

Course Description:

This course provides an introduction to the management of automotive retail fixed operations, automotive retail industry and environment, developing concepts and methods to improve customer satisfaction along with an increase in market penetration, profits and efficiency, planning of workflow control, and human resource management.

42. Practice of Internal Combustion Engine

Credits: 3

Prerequisites: None

Course Description:

This course provides the learner with the following contents: practical technical skills, 720-degree power cycle and the dynamics of engine operation, design, laboratory experience consisting of engine disassembly, component design study, inspection and measurement of components, and engine assembly techniques.

43. Practice of Engine Management System

Credits: 3

Prerequisites: None

Course Description:

This laboratory experience will provide students with the opportunity to use standard electronic diagnostic tools, specialized equipment, and computerized diagnostic tools used for engine performance diagnosis.

44. Practice of Automotive Electrical Systems

Credits: 2

Prerequisites: None

Course Description:

This course provides knowledge about the structure and working principles of automotive electric motor systems, methods of disassembling, inspecting, repairing, determining the causes of damage, methods of diagnosing and finding panels belonging to the motor electrical system including power supply system, starting system, engine control system, coding system, and anti-theft system.

45. Practice of Automotive Powertrains System **3**

Credits:

Prerequisites: None

Course Description:

This course provides students with the opportunity to experience the practical side of automotive engineering technology and gain basic knowledge about automotive powertrain systems, including clutch-gearbox, automatic transmission, transmission shafts posted, active bridge, active multi-bridge vehicle (4WD); system structure, general structure, structure detailed cluster, working principle of each system and cluster; method of disassembling, assembling, inspecting these assemblies when disassembled from the vehicle, the method of checking the assemblies or the system when it is assembled on vehicle.

46. Practice of Automotive Chassis System

Credits: 3

Prerequisites: None

Course Description:

This module provides students with basic knowledge regarding automotive engineering technology, including structure, system working principle, skill of disassembling, assembling detailed assemblies, methods to check the system assembly when it is still in the vehicle or when it is disassembled, control of the system and automobile motion. This system includes suspension, steering, angle of the wheels, brakes.

47. Computer Application (EN)

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with basic knowledge and ability to apply some software applications such as MATLAB, AVL boost, Advisor, CFD, ESP, etc., in designing the details of engine systems and the simulation of combustion processes, calculation of the fuel consumption, engine performance, and emissions in internal combustion engines.

48. Computer Application (CH)

Credits: 2

Prerequisites: None

Course Description:

This course helps students to synthesize and systematize knowledge, as well as to develop methods for modeling, simulation, and applicability of computer software to solve technical problems related to dynamics, control, and automotive design.

49. Computer Application (EL)**Credits: 2***Prerequisites: None**Course Description:*

This course provides the theoretical knowledge and method for the measurement of sensors on vehicles, automotive communication devices, theory, and the method to control the actuators and automation systems on vehicles.

50. Special Project (EN)**Credits: 1***Prerequisites: None**Course Description:*

This course provides the learner with the following contents: strengthening, synthesizing and applying the knowledge to thermodynamic cycle calculation of internal combustion engine, kinetics and dynamics of structure and calculation structure, some basic details on internal combustion engine, the use of software applications (MATLAB) to calculate heat and kinetic dynamics of internal combustion engine, how to evaluate a number of important kinetic and kinematic properties of the structure, graphs of dynamics, and dynamics of generating structure.

51. Special Project (CH)**Credits: 1***Prerequisites: None**Course Description:*

The aim of this course is to apply the knowledge acquired in the subjects of Theory of Vehicles and Vehicle Design regarding the overall calculation of a car cluster or system, evaluating some operational features of the automotive system, and the working criteria of the automobile.

52. Special Project (EL)**Credits: 1***Prerequisites: None**Course Description:*

This course helps students synthesize and apply knowledge needed to calculate some basic details on the automotive electrical and electronic system. In addition, the course also prepares students for the application of software to calculate and program some important automotive systems.

53. Automotive Assembly and Manufacturing Technology**Credits: 2***Prerequisites: None**Course Description:*

This course provides the learner with the following contents: automobile manufacturing and assembly technology, organizational forms, content design, technological processes in automobile assembly and repair, standards, procedures for technical safety and environmental protection inspection of automobiles. This course helps learners to build their organizational, production and professional competence in automobile assembly.

54. Automotive Diagnostic and Repair Techniques**Credits: 2***Prerequisites: None**Course Description:*

This course provides the learner with the following contents: automotive diagnostic and repair technologies, diagnostic process in auto repair, standards, procedures for technical

safety and environmental protection inspection of automobiles. This course helps learners develop organizational, managerial and operational competencies in automobile diagnostics and repair.

55. Automotive Vibration and Noise

Credits: 2

Prerequisites: None

Course Description:

This course helps students with basic knowledge of the physical nature, origins, and causes of car noise, vibration and impact, and provides diagnostic and corrective measures.

56. Practice of Automotive Diagnostics

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the following contents: process for diagnostic testing of automotive engines, methods of operating and using the engine test equipment, method of using technical documents, electronic engine controls and emission systems, fuel analysis, advanced diagnostics, legislative regulations, and new technologies related to engine controls and emission systems. Laboratory activities include the use of advanced diagnostic tools such as oscilloscopes, scan tools, exhaust gas analyzers, and chassis dynamometer.

Textbook:

57. Practice of Automotive Body and Paint

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the insight into the automobile body structure, guides learners to practice methods, welding techniques, and repairing bodywork, encourages students to practice processes and preparation methods for surface and tinting, spray paint. This course prepares learners by providing skills related to organization, operation and implementation of tire repair techniques.

58. Practice of Automotive Programming

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the following contents: electrical signals in cars (input signals, control outputs), methods of controlling various types of automotive actuators, control algorithms, and application of this knowledge in programming and controlling each specific system.

59. Enterprise Seminar (AET)

Credits: 1

Prerequisites: None

Course Description:

The content of the course includes knowledge related to technical and professional activities and services at enterprises in the field of automotive technology. After completing this course, students can quickly access the working environment at domestic and foreign companies, promptly responding to work requirements at the company.

60. Graduation Practice

Credits: 2

Prerequisites: None

Course Description:

This course provides the learner with the following contents: designing a modern workshop, process and management works of an agent, methods of diagnosis, the use of diagnostic tools, the process of maintenance and repair of car damage, design and working principles of new systems on modern vehicles.

61. Graduation Thesis

Credits: 10

Prerequisites: None

Course Description:

This is the capstone project, also known as the applied thesis, which aims to solve a particular problem that has a relationship to the students' field of study, and can be chosen by themselves or with the help of their lecturers. This project will help students to systematize and synthesize knowledge and skills obtained through their major, and apply them in a scientific and creative manner to solve a specific problem in practice. The students will have the opportunity to improve their thinking ability and the skills to identify and solve problems independently and creatively.

10. Facilities for Learning

10.1. Workshops, Laboratories, and Experimental Equipment Systems

- **Workshops for learning:** Engine Workshop, Chassis Workshop, Body and Paint Workshop, Diesel Engine Workshop, Automotive Electrical Workshop, Toyota GJ & BP TTEP Center.
- **Laboratories:** Engine Laboratory, Automotive Electronics Laboratory, Automotive Laboratory, Engine Dynamometer Lab.
- **Computer lab for automotive system simulation.**
- **Models:** Engines, engine systems, automobiles, chassis, powertrains, engine electrical systems, vehicle body electrical systems, automotive automatic control systems, and automotive machine components.
- **Automobiles for experiments and practical learning:**
 - o Toyota vehicles (CAMRY, HIACE, VIOS, etc.), Honda vehicles (ACCORD, ACCURA, etc.)
 - o Electric vehicles (Tesla, Renault Zoe, etc.)

10.2. Library and Websites

<https://www.wikipedia.org/>; <https://www.howstuffworks.com/>;

<http://www.fueleconomy.gov/>;

<https://www.automotive-technology.com/>; <http://www.autoshop101.com/>;

<https://www.autoeducation.com/>; <http://www.autorepair.about.com/>;

11. Program Implementation Guidelines

The training program is implemented in accordance with the current regulations for full-time university-level credit-based training, as stipulated by the Ministry of Education and Training and Ho Chi Minh City University of Technology and Education.

The specified hours are calculated as follows:

- 1 credit = 15 hours of theoretical lectures or in-class discussions

- 1 credit = 30 - 45 hours of laboratory work or practical exercises
- 1 credit = 30 hours of self-study
- 1 credit = 45 - 90 hours of on-site internship
- 1 credit = 45 - 60 hours for project work or graduation thesis

The total hours for a course must be a multiple of 15.

Political Theory Knowledge: Implemented according to the regulations of the Ministry of Education and Training.

Foreign Language Knowledge: The foreign language output standard is determined by the university's Science and Training Council at the beginning of each admission cohort. Throughout their studies, the university will monitor the students' foreign language proficiency development each academic year to decide the number of credits for courses that students are allowed to register for in a semester. Students can self-study or register for the foreign language proficiency development program according to the university's plan.

Physical Education Knowledge: Implemented according to the regulations of the Ministry of Education and Training. For Physical Education 2 and 3, students can select from the course catalog when registering for modules.

National Defense Education Knowledge: Implemented according to the regulations of the Ministry of Education and Training. Students accumulate credits and are granted a certificate after completing the requirements of the module.

Elective Social Sciences and Humanities Knowledge: Students select 2 courses, equivalent to 4 credits, from the course catalog when registering for modules.

Elective Foundational Major Knowledge: Students select 1 course, equivalent to 3 credits, from the course catalog when registering for modules.

Elective Specialized Major Knowledge: Students select 4 courses, equivalent to 6 credits, from the course catalog when registering for modules.

The remaining knowledge blocks are arranged into 8 semesters as presented in section 8.

VICE PRESIDENT

**DEAN OF FACULTY
OF INTERNATIONAL EDUCATION**

Dr. Quach Thanh Hai

Assoc. Prof. Dr. Truong Dinh Nhon