TRƯỜNG ĐẠI HỌC
SƯ PHẠM KỸ THUẬT TP. HỒ CHÍ MINH
KHOA ĐÀO TẠO QUỐC TẾ
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UNDERGRADUATE CURRICULUM MANUAL

AUTOMOTIVE ENGINEERING TECHNOLOGY

Program Chair: Duong Tuan Tung

2022

AUTOMOTIVE ENGINEERING TECHNOLOGY

I. CURRICULUM

1st Semester

No.	Course code	Course name	Credits	Prerequisite
1.	LLCT130105E	Philosophy of Marxism and Leninism	3	
2.	GELA220405E	General Law	2	
3.	INAT130130E	Introduction to Automotive Technology	3 (2+1)	
4.	PHYS130902E	Physics 1	3	
5.	MATH132401E	Calculus 1	3	
6.	GCHE130603E	Chemistry for Engineering Students	3	
7.	PHED110513E	Physical Education 1	1	Non-accumulation
8.	ACEN340535E	Academic English 1	4	
9.	ACEN340635E	Academic English 2	4	
Total			**25**	

2nd Semester:

No.	Course code	Course name	Credits	Prerequisite
1.	LLCT120405E	Scientific socialism	2	
2.	LLCT120205E	Political Economics of Marxism and Leninism	2	
3.	MATH132501E	Calculus 2	3	
4.	PHYS131002E	Physics 2	3	
5.	PHYS111202E	Physics - Laboratory 1	1	
6.	MATH132901E	Mathematical Statistics for Engineers	3	
7.	THME230721E	Theoretical Mechanics	3	
8.	PHED110613E	Physical Education 2	1	Non-accumulation

9.		National Defense Education	4	Non-accumulation
10.	ACEN440735E	Academic English 3	4	
11.	ACEN440835E	Academic English 4	4	
Total			**25**	

3rd Semester:

No.	Course code	Course name	Credits	Prerequisite
1.	LLCT120314E	Ho Chi Minh's ideology	2	
2.	CCPR224064E	C Programming	2 (1+1)	
3.	THER222932E	Thermal Engineering	2	
4.		Social Sciences and Humanities (1) (option)	2	
5.	MATH132601E	Calculus 3	3	
6.	MMCD230323E	Mechanisms and Machine Components Design	3	
7.	STMA230521E	Strength of Materials	3	THME230721
8.	PHED130715E	Physical Education 3	1	Non-accumulation
9.	TEDG130120	Technical drawing - Basic course	3	
Total			**20**	

4th Semester:

No.	Course code	Course name	Credits	Prerequisite
1.		Mathematics and Natural Sciences (1) (option)	3	

2.	ICEP330330E	Internal Combustion Engine Principles	3	
3.	THEV330131E	Theory of Vehicles	3	
4.	AEEE230833E	Electrical and Electronic Engineering	3	
5.		Social Sciences and Humanities (2) (option))	2	
6.	TOMT220225E	Measuring Techniques & Tolerances	2	
7.	FMMT320825E	Fundamentals of Machine Manufacturing Technology	2	Choose 1
8.	PHEQ220332E	Hydraulic Machines	2	
9.	METE320126E	Metal Technology	2	
10.	FLUI220132E	Applied Fluid Mechanics (FME)	2	
Total			**18**	

5th Semester:

No.	Course code	Course name	Credits	Prerequisite
1.		Mathematics and Natural Sciences (2) (option)	3	
2.	LLCT220514E	History of Vietnamese communist party	2	
3.	AMIC320133E	Application of Microcontroller	2	
4.	VEDE320231E	Vehicle Design	2	THEV330131E
5.	AEES330233E	Automotive Electrical and Electronic Systems	3	
6.	ICEC320430E	Internal Combustion Engine Calculation	2 (1+1)	ICEP330330
7.	PICE331030E	Practice of Internal Combustion Engine	3	ICEP330330
8.	PAPS331131E	Practice of Automotive Powertrains System	3	

9.	IEPR550935E	IELTS Preparation	5	Non-accumulation
Total			**20**	

6th Semester:

No.	Course code	Course name		Credits	Prerequisite
1.	VACS330333E	Vehicle Automatic Control Systems		3	
2.	CAES320530E	Application of computer (EN)		2 (1+1)	Chọn 1
3.	CADS320531E	Application of computer (CH)		2 (1+1)	
4.	CAMC320533E	Application of computer (EL)		2 (1+1)	
5.	PEMS331130E	Practice of Engine Management		3	
6.	PACS321231E	Practice of Automotive Chassis System		2	
7.	PAES321133E	Practice of Automotive Electrical Systems		2	AEES330233E
8.	AEVE320830E	Alternative Energies for Vehicles		2	
9.		Interdisciplinary 1 (option 1)		2	
10.	ENTW611038E	English for Thesis Writing		1	
11.	SPAE310730E	Special Project (EN)	Choose 1	1	ICEC320430
12.	SPAC312131E	Special Project (CH)		1	VEDE320231
13.	SPAE310733E	Special Project (EL)		1	AACS330333
Total				**18**	

7th Semester:

No.	Course code	Course name	Credits	Prerequisite
1.	ENSE320931E	Enterprise Seminar (AET)	2	

2.	AAMT320830E	Automotive Assembly and Manufacturing Technology	2	Choose 1
3.	ADRT320331E	Automotive Diagnosis and Repair Techniques	2	
4.	AVIN320431E	Automotive Vibration and Noise	2	
5.	PABE331233E	Practice of Automotive Body Electrical systems	3	
6.	POAD321230E	Practice of Automotive Diagnostics	2	Choose 1
7.	PABP321331E	Practice of Automotive Body and Paint	2	
8.	PAUP321333E	Practice of Automotive Programming	2	
9.		Interdisciplinary 2 (option 2)	3	
10.	ASMA220230E	Automotive Service Management	2	
Total			**14**	

8th Semester:

No.	Course code	Course name	Credits	Prerequisite
1.	PRGR432130E	Practice of Graduation (AET)	3	
2.	GRTH472030E	Graduation Thesis	7	
Total			**10**	

ELECTIVE COURSES

Social Sciences and Humanities (4 credits)

No.	Course ID	Course Title	Credits	Note
1	GEEC220105E	General Economics	2	Choose 2
2	IQMA220205E	Introduction to Quality Management	2	
3	INMA220305E	Introduction to Management	2	

4	INLO220405E	Introduction to Logic	2	
5	ENPS220591E	Engineering Psychology	2	
6	SYTH220491E	System Thinking	2	
7	PLSK120290E	Planning Skills	2	
8	WOPS120390E	Workplace Skills	2	
9	REME320690E	Research Methods	2	

Mathematics and Natural Sciences (6 credits)

No.	Course ID	Course Title	Credits	Note
1.	MATH133101E	Higher Mathematics for Engineers 1	3	Choose 2 among 3
2.	MATH133201E	Higher Mathematics for Engineers 2	3	
3.	PHYS131102	Principles of Physics 3	3	

Interdisciplinary (5 credits)

No.	Course ID	Course Title	Credits	Note
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	

II. COURSE DESCRIPTIONS

C Programming Language **Credits: 2**

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.

Textbook:

Deitel, Paul, and Harvey Deitel. *C: How to Program.* 7th ed., Pearson, 2012.

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.

Textbook:

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).

Textbook:

1) Hibbeler, Russell C. *Engineering Mechanics*. 13th ed., Prentice Hall, 2012.
2) Meriam, J. L., and L. G. Kraige. *Engineering Mechanics*. 7th ed., John Wiley & Sons Inc., 2006.

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.

Textbook:

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.

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.

Textbooks:

1) Madsen, David A., and David P. Madsen. *Engineering Drawing and Design*. 6th ed., Cengage Learning, 2016.
2) Narayana, K. L., P. Kannaiah, and K. Venkata Reddy. *Machine Drawing*. 3rd ed., New Age International Publishers, 2008.

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.

Textbook:

1) Henzold, Georg. *Geometrical Dimensioning and Tolerancing for Design, Manufacturing and Inspection: A Handbook for Geometrical Product Specification Using ISO and ASME Standards*. 2nd ed., Butterworth-Heinemann, 2006.
2) Narayana, K. L., P. Kannaiah, and K. Venkata Reddy. *Machine Drawing*. 3rd ed., New Age International Publishers, 2008.

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.

Textbook:

1) Herman, Stephen. *Industrial Motor Control*. Delmar Cengage Learning, 2014.
2) Theraja, B. L. and A. K. Theraja. *A Textbook of Electrical Technology, Vol 1: Basic Electrical Engineering*. S Chand & Co, 1999.

3) Theraja, B. L. and A. K. Theraja. *A Textbook of Electrical Technology,Vol 4: Electronic Devices and Circuits.* 23rd ed., S Chand & Co, 2006.

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

Textbook:

1) Moran, Michael J., et al. *Introduction to Thermal Systems Engineering: Thermodynamics, Fluid Mechanics, and Heat Transfer*. 2nd ed., Wiley, 2002.

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.

Textbook:

Application of Microcontroller **Credits: 2**

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.

Textbook:

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.

Textbook:

1) El-Hofy, Hassan Abdel-Gawad. *Fundamentals of Machining Processes: Conventional and Nonconventional*. CRC Press, 2013.
2) Juneja, B. L. *Fundamentals of Metal Cutting and Machine Tools*. New Age International, 2003.
3) Knight, Winston A. *Fundamentals of Metal Machining and Machine Tools*. 3rd ed., Taylor and Francis, 2016.

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.

Textbook:

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.

Textbook:

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.

Textbook:

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

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

Vehicle Design **Credits: 2**

Prerequisites: None

Course Description:

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

Textbook:

Alternative Energies for Vehicles **Credits: 2**

Prerequisites: None

Course Description:

This course provides the learner with the following contents: kkinematics 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.

Textbook:

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.

Textbook:

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.
Textbook:

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.
Textbook:

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.
Textbook:

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.
Textbook:

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.

Textbook:

Practice of Automotive Powertrains System **Credits: 3**

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.

Textbook:

Practice of Automotive Chassis System **Credits: 2**

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.

Textbook:

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.
Textbook:

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.
Textbook:

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.
Textbook:

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:

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.
Textbook:

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.

Textbook:

Enterprise Seminar (AET) **Credits: 2**

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.

Textbook:

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.

Textbook:

Graduation Thesis **Credits: 6**

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.