



**PROGRAMME SPECIFICATION**  
**UNDERGRADUATE PROGRAMME IN**  
**MANAGEMENT INFORMATION SYSTEM**  
**2021-2022**

**THE UNIVERSITY OF DANANG  
UNIVERSITY OF ECONOMICS**

**PROGRAMME SPECIFICATION  
UNDERGRADUATE PROGRAMME  
IN  
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SYSTEM**

**2021-2022**

**DANANG, 2021**

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# **1 General information about the undergraduate programme**

## **1.1 Introduction**

The undergraduate programme in Management Information Systems (MIS) was established and commenced in 2005. The programme aims to train professionals in the field of information system management, applicable to business administration as well as socio-political organizations in the context where most activities of enterprises and organizations are heavily computerized and digitized. This naturally demands a significant workforce in the field of Management Information Systems for the present and the future.

The Bachelor's programme in MIS equips learners with fundamental knowledge of business management as well as the foundations of Management Information Systems. The programme enhances MIS-related skills to provide learners with the capability to analyze, evaluate, design, and implement information systems, particularly focusing on the deployment and management of information systems in the activities of businesses or organizations.

Upon graduation, MIS graduates have the potential to pursue various careers ranging from specialists to administrators and leaders in Information Technology (IT) companies or companies offering IT solutions for enterprises and organizations. They can also work in enterprises or organizations that apply IT in their operations. With the knowledge and skills acquired, MIS graduates possess outstanding capabilities in positions that involve interaction with end-users of MIS.

The training programme also equips learners with essential soft skills to engage in self-learning, independent research, and professional development to keep up with the rapid changes in Information Technology and have a lifelong learning capacity.

## **1.2 General information**

The general information of undergraduate programme in the Management Information System programme is shown in the Table 1.

Table 1. General information of undergraduate programme in Management Information System

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Programme title:	Management Information System
Level:	Undergraduate
Type of degree:	Bachelor of Management Information System
Mode of study:	Full time

Study duration:	3 - 6 years (normal duration is 4 years)
Total of credits:	134 credits ( <i>excluding Physical Education &amp; National Defence Education courses</i> )
Faculty:	Faculty of Statistics - Informatics (UD-FSI)
Language:	Vietnamese, English
Website:	<a href="http://due.udn.vn/vi-vn/khoa/thong-ke-tin-hoc">http://due.udn.vn/vi-vn/khoa/thong-ke-tin-hoc</a> (Vietnamese) <a href="http://due.udn.vn/en-us/statisticandinformatics">http://due.udn.vn/en-us/statisticandinformatics</a> (English)
Facebook:	<a href="https://www.facebook.com/KhoaThongKeTinHoc.DUE">https://www.facebook.com/KhoaThongKeTinHoc.DUE</a>
Issue:	2021

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### 1.3 Educational philosophy, vision and mission of DUE

DUE believes that higher education plays a pivotal role in "shaping the future society". DUE's educational philosophy focuses on the betterment of humanity, scientific spirit, and the fostering of lifelong learners, who work towards building a progressive and prosperous society.

Under that spirit, UD-DUE's educational philosophy is established as

#### **“Liberal Arts - Self-initiative - Pragmatism”**

- **Liberal Arts Education:** We believe that our educational mission allows for a transformative experience that allows individuals to engage in self-discovery through the transference of ideas and knowledge that lead to social action. This concept helps students become active participants in the building of a better world. Higher education as a whole play a significant role in the facilitation of conditions, that steer individuals towards the development of themselves and their values, which ultimately builds their capabilities to contribute towards social progress.

- **Self-initiative Education:** At the core of higher-education lies a need for the creation of self-discipline. Our educational philosophy seeks to motivate students to take self-initiative in training themselves, bettering themselves and engaging in the act of self-reflection.

- **Pragmatism:** We have determined that the accumulation of knowledge and creativity in higher education must be of practical value and of service to social progress. Thus, our education focuses on the implementation of pragmatism and ethics in research, training and development cooperation.

- **Vision**

University of Economics – the University of Danang is envisioned as a leading research university in Vietnam, significantly contributing to the prosperity of ASEAN community and human knowledge.

- **Mission**

As a research-oriented university, we create a humanistic and innovative academic environment to accelerate knowledge discovery, application and transfer of scientific knowledge in economics and management; ensure a successful foundation and lifelong learning capacity for learners; nurture and develop talents; tackle the socio-economic challenges; and serve the prosperous development of the community.

- **Values**

- Integrity
- Creativity
- Co-operation
- Sympathy
- Respect

#### **1.4 Objectives of the undergraduate programme**

The Management Information System programme (specializing in System Administration) provides learners with a systematic understanding of foundational knowledge in economics, social sciences, business management, accounting, and finance. The programme specifically focuses on in-depth knowledge of management information system, organizational principles, and information system governance.

The programme enhances MIS-related skills to equip learners with a minimum competency for activities such as analysis, evaluation, design, and ensuring the security and safety of information systems, particularly emphasizing the management of information systems within the operational processes of businesses or organizations.

Additionally, the training programme equips learners with essential soft skills such as teamwork, leadership, critical thinking, creativity, and analytical skills. It instills a sense of legal compliance and personal and social responsibility. It also cultivates the ability to conduct independent research, engage in continuous professional development, and maintain a lifelong learning mindset.

After completing the programme and graduating within 3 to 5 years, students will have the necessary skills to develop careers in the following roles:



- (PO1) Consultant, implementer, and developer of information systems
- (PO2) IT project manager, evaluator, and decision-maker for information technology systems within businesses.

### 1.5 Programme Learning outcomes

Upon completion of the Management Information System programme, students have the capability to:

Table 2. PLOs of the programme

PLO	Contents	Bloom Taxonomy
PLO1	Apply basic knowledge in economics, management, and law in business practice	Cognitive - Level 3
PLO2	Demonstrate the ability of identifying and solving practical problems based on programming languages	Cognitive - Level 3
PLO3	Perform the ability of analyzing and designing information systems	Cognitive - Level 5
PLO4	Manage Information systems in organizations	Cognitive - Level 4
PLO5	Build data databases and data mining models for decision-making in business	Cognitive - Level 5
PLO6	Demonstrate communication effectively in business	Psychomotor - Level 3
PLO7	Demonstrate communicate in a foreign language at an intermediate level	Psychomotor - Level 3
PLO8	Solve practical problems based on modern technological platforms	Cognitive - Level 6
PLO9	Act responsibly at work and within community, respect and comply with the laws	Affective - Level 5

Table 3. PLOs and PI of the programme

PLO	PLO Content	PI	PI content
PLO1	Apply basic knowledge in economics, management and law in business practice	PI1.1	Apply basic knowledge in economics to business practice
		PI1.2	Apply basic knowledge in management to business practice
		PI1.3	Apply basic knowledge in law to business practice
PLO2	Demonstrate the ability of identifying and solving	PI2.1	Design algorithms for information systems

PLO	PLO Content	PI	PI content
	practical problems based on programming languages	PI2.2	Use programming techniques to solve practical problems
PLO3	Perform the ability of analyzing and designing information systems	PI3.1	Analyze information systems based on specified requirements
		PI3.2	Design information systems based on specified requirements
PLO4	Manage Information systems in organizations	PI4.1	Implement and operate information systems
		PI4.2	Manage IT projects
PLO5	Manage data databases and data mining models for decision-making in business	PI5.1	Build databases
		PI5.2	Manage databases
		PI5.3	Build data mining models
PLO6	Demonstrate communicate effectively in business	PI6.1	Prepare documents and reports as required
		PI6.2	Present issues effectively to others
PLO7	Demonstrate communicate in a foreign language at an intermediate level		
PLO8	Solve practical problems based on modern technological platforms		
PLO9	Act responsibly at work and within community, respect and comply with the laws	PI9.1	Participate in community service
		PI9.2	Respect individuality and workplace culture, comply with the provisions of the law.

## 1.6 Job positions

Management Information Systems graduates:

*Are capable of undertaking the following tasks:*

- Business, consulting, implementation and integration of software and information system solutions in business and management;
- Business expert, consultant, deploying information system solutions
- Analysis of business processes in management: distribution chain management (purchase, sales, warehouse); accounting financial; personnel salaries; management of production and supply of materials; customer care; ...

- Consulting, evaluating feasibility and managing information system development projects;
- Consulting, strategic planning for development and management of information systems;
- Design and management databases and data warehouses;
- Analyze, mine data and build business intelligence (BI) solutions;
- Management of e-commerce websites, electronic portals and information systems.
- Programmer
- Software testing and quality assurance
- Researchers, lecturers teaching management information systems in research and training organizations

***Have career opportunities in socio-economic and business organizations such as:***

- Enterprises, state-owned and non-governmental organizations that have applied IT in production and management activities;
- Agencies and businesses specializing in developing, consulting, testing and deploying software applications and business management solutions on IT platforms;
- Education and training institutions, research centers and institutes in the field of administration and management.
- In addition, bachelors majoring in Management of Information System can continue to study postgraduate programmes in majors: Computer Science, Information Systems, Management Information Systems, Administration business, Accounting, Finance, Banking... in Vietnam or overseas.

## **1.7 Admission Criteria, Academic Training Process and Graduation Requirements**

### **1.7.1 Admission Criteria**

According to the university enrollment regulations of the MOET and the enrollment scheme of DUE, the MIS Programme accepts applicants who meet the following conditions:

1. Graduated from high school

2. Won national and international excellent students awards at high school level; Won first or second prizes in excellent student competitions for grade 12 students at the provincial and city levels. These prizes are only counted in Maths, Physics, Chemistry, Literature, English, Computer Science and Biology.

3. Participated in the contest "Road to Olympia" on VTV

4. Have a valid English proficiency certificate (IELTS minimum 5.5 or TOEFL iBT minimum 46 points) and have a total score of minimum 12.0 points in 02 (two) DUE selected subjects (including Math and another subject that is not a foreign language) in the national high school exams.

### **1.7.2 Training process**

The programme structure complies with the regulations of the Ministry of Education and Training, the University of Danang and the University of Economics. The curriculum is built on a credit unit system that allows students flexibility in their individual study plans. The programme duration is 4 years, which can be shorten to 3 years or extended up to 6 years, depending on students' ability and learning conditions.

The programme consists of 134 credits (excluding the credits of the Physical Education and Defense Education courses). Each academic year has two main semesters (starting from mid-August to late June) and one summer semester (starting from early July to mid-August). The curriculum is divided into 4 clusters of courses: General courses that account for 43 credits; Fundamental courses that account for 24 credits; Specialized and major courses that account for 67 credits, including Specialize courses that account for 21 credit, Major courses that account for 36 credits (21 compulsory credits and 15 elective credits); and 10 credits for Graduation internship.

According to the training roadmap, students will study the courses of the general knowledge cluster, the courses of the fundamental in parallel with learning the courses of the specialized cluster since the first year. Major courses start from the second year. At the end of the second year, students are aware their career and corporate environment so that they can have strong motivations in discovering knowledge, hone skills to be ready to participate in the labor market after graduation. At the end of the third year, most students have completed the courses in the general cluster, the fundamental cluster and the specialized cluster. Students have all the necessary knowledge to participate in the Career Internship course in the summer semester. In this course, students directly participate in the training process of both skills and knowledge at the enterprise, and at the same time participate in the actual production process at the enterprise to learn about future careers. In the seventh semester, students take required or elective courses of

their major to provide in-depth or complementary knowledge to their preferred career position.

In the last semester, students register for the final graduation internship and can choose one of three types: Graduation internship report, Graduation thesis and Graduation project. Graduation internship at the end of the course has 10 credits, students will go to graduate internship full-time at enterprises and write reports. With the Graduate Internship Report, the number of credits is 4 and students choose to study 6 credits from the major elective courses. With a 10-credit Graduation Thesis, students are required to take the Scientific Research Methods course.

### **1.7.3 Graduation requirements**

Students are qualified for graduation when they meet the following requirements:

- Have not been criminally prosecuted or are not in the period of being disciplined at the level of academic suspension up to the time of graduation,
- Accumulate a sufficient number of courses in the programme.
- Have a cumulative GPA of 2.00 or higher.
- Satisfy a number of requirements on the scores of major courses and other conditions prescribed by the principal.
- Have a certificate of completing the defense education and physical education course.
- Have an English language proficiency certificate (TOIEC 450 or equivalent).
- Have applied to the Academic Affairs Department to be considered for graduation if eligible to graduate earlier or later than the course duration.

Graduation conditions can be updated according to the current regulations

### **1.8 Teaching and learning strategies**

Teaching and learning activities are designed to enable students to develop not only knowledge, but also skills and attitudes, which helps them meet the PLOs. There are six teaching-learning strategies applied in the programme, i.e. direct instruction, brainstorming, activity-based, cooperative, independent study, and technology-based teaching.

The application of these different teaching-learning strategies is intended to provide students with both basic knowledge and the ability to cooperate with others as well as to develop the potential and strengths of each individual. Thereby, students

can develop personal skills such as communication, negotiation and teamwork skills. The teaching-learning strategies used in the programs are specified as follows:

### **1.8.1 Direct instruction**

For the direct instruction strategy, information is delivered to students in a direct way: the teacher lectures and the students listen. This strategy is often used in traditional classrooms and is especially effective when teachers want to impart basic knowledge to students or explain a new skill.

The direct instruction strategy applied to the Management Information Systems programme includes: explicit teaching, lectures and guest lectures.

- *Explicit Teaching (TLM1)*: Lecturers provide guidance and explanation on aspects of lesson content, helping students gain knowledge and skills.

- *Lecture (TLM2)*: Lecturers present and explain the content of the lecture in detail, while the students have the responsibility to listen and take notes to gain knowledge.

- *Guest lecture (TLM3)*: Students are joined by speakers or presenters who are not lecturers. They are experts with extensive experience in the field of Information Technology and Management of Information Systems from Vietnamese enterprises and organizations, or foreign enterprises and organizations operating in the field of Information Technology, building IT solutions or digital transformation for management or applying IT in management. They can provide valuable insight into the actual working environment as well as the requirements of the job positions related to the Management of Information Systems major. This method is used for a group of specific courses (with the teaching of business experts) and extracurricular activities.

### **1.8.2 Critical thinking**

This strategy develops critical thinking, questioning skills, skills to analyze and practice reflective skills in students' learning methods. These strategies are designed to promote creative, independent thinking and learning comprising of problem solving and brainstorming and specific case studies.

- *Problem solving (TLM4)*: Problem solving is a process where students must use deep and logical thinking to recognize and solve problems between the current situation and the desired goal. In the process of teaching and learning, students with problems will be arranged and learn new knowledge while facing and solving problems.

- *Brainstorming (TLM5)*: Brainstorming is a teamwork process to create questions, ideas and examples are used to illustrate, expand and delve into the main idea or topic. Each member of the group is encouraged to comment without consideration of feasibility. This method flexibly simulates students' thoughts and helps increase their ability to find and expand problems. It is used in subjects to describe the development of creative thinking, seeking ideas and methods to solve problems.

- *Case study (TLM6)*: This is a method of teaching that focuses on students, helping students create deep thinking and exchange with the community. With this method, the instructor will set out tasks and timelines depending on the situation, problems and challenges encountered. Requiring students to identify and analyze problems will help students build problem-solving skills, decision-making skills and study skills. The university programme utilizes international cases that provide a practical approach in administration.

- *Debates (TLM10)*: A strategy in which teachers raise an issue related to the lesson, and students, with different opinions, will analyze, explain, and convince others to agree with their points of view. Through debates, students can get useful skills such as critical thinking, negotiation, decision making, and public speaking.

### **1.8.3 Activity-Based**

This strategy encourages students to study through practical activities. These activities give students the opportunities to experience reality, which will motivate learners to make discoveries, make decisions, solve problems and interact with others on their own.

- *Role play (TLM7)*: The method in which students assume different roles in a situation and interact (act) with others.

- *Game (TLM8)*: Presentation is a useful strategy for students to introduce, provide knowledge or explain any event, report or topic. Through oral presentation, students will not only gain knowledge but also improve many other skills such as communication, negotiation, or teamwork. Games are viewed as interactive activities. Games can create reciprocal support among team members and increase the confidence of each individual's students to become more capable and competitive. By the end of the game, students will give presentations to convey reports or results. Students have access to a presentation method in their first-semester to help them shape their ability to communicate effectively as well as improve negotiation and leadership skills, essential competitive factors of a manager.

- *Field trip (TLM9)*: Visit factories and companies to help students experience the real working environment of the industry they are studying providing opportunities to explore and learn technology applied in the job; build skills and traditions in workplace. Field trips were developed from the beginning of university programs in Vietnam. Through the trip, students have the opportunity to see first hand the activities of enterprises in many industries. These activities not only provide experience for students but also able to develop their ability to integrate in the local business environment.

#### **1.8.4 Cooperative**

Cooperative strategy helps students become active, responsible and thoughtful, thanks to active interaction and team collaboration. In addition, students can practice listening and respect skills and consider aspects of a problem. This strategy focuses on making students interact with each other and then applying these skills to practice.

- *Discussion (TLM11)*: A strategy in which students are divided into groups and give opinions on the issues that the lecturers have given. This strategy helps students analyze definitions, ideas, topic data and discuss with the lecturer, they can link ideas and clarify issues.

- *Teamwork learning (TLM12)*: Students are divided into small groups to solve given problems and present the results by report or presentation. In the curriculum, students are provided basic knowledge and teamwork skills from the first year. Next, they will practice this method in subjects at different levels.

#### **1.8.5 Independent learning strategies**

This strategy helps students build knowledge and skills to become self-directed, positive and independent students. Learners have the opportunity to make decisions about their education, discovery and study of a problem. Through it, students also form time management skills and self-monitoring.

- *Inquiry (TLM13)*: In the teaching process, lecturers use open questions or problems and guide students to answer step by step. Students will create a discussion group to solve the problem.

- *Research Project (TLM14)*: A strategy develops, with teacher guidance, the student's ability to plan, explore, organize, and communicate a topic of interest independently and in more detail. It is also used to generate thoughts, review or research a topic, and extend personal learning within the framework of curriculum expectations. It makes students active participants in the learning process, thereby enhancing motivation and retention. Through independent study, students learn to



make responsible choices and accept responsibility for their own learning. UE-UD have a wide range of textbooks and up-to-date reference materials that support student's self-study.

- *Technology-based Method (TLM15)*: Lecturers and students use online tools to support the teaching and learning process.

- *Work Assignment (TLM16)*: A work that is completed by the student outside of class and involves review and practice of classroom learning. It is assigned to encourage students' responsibility for their own learning and their acquisition of specific skills or knowledge. Work assignment can also encourage students to pursue an in-depth interest in a topic and generate new thoughts on the topic.

- *Other Method (TLM17)*: Other Methods.

### 1.8.6 Technology-based

Technology-based teaching plays an important role in the learning environment in a modern society. Applying this strategy, the approach is widely used in different courses throughout the undergraduate MIS programme.

- *Technology Based Methods (TLM15)*: Lecturers and students use educational tools and platforms to support teaching and learning (UD-DUE's E-learning portal, Google services, Microsoft, etc.).

Table 4. The compatibility between teaching/learning methods and PLO

Teaching & Learning method	PLO								
	1	2	3	4	5	6	7	8	9
TLM1	X	X	X	X	X	X	X	X	X
TLM2	X	X	X	X	X	X	X	X	X
TLM3		X	X	X	X	X	X	X	
TLM4	X	X	X	X	X	X	X	X	
TLM5		X	X	X	X	X	X	X	
TLM6	X	X	X	X	X	X	X	X	X
TLM7									
TLM8									
TLM9		X	X	X	X				X
TLM10	X	X	X	X	X	X	X	X	
TLM11	X	X	X	X	X	X	X	X	X
TLM12		X	X	X	X		X		X
TLM13	X	X	X	X	X	X	X	X	X
TLM14			X	X	X				

Teaching & Learning method	PLO								
	1	2	3	4	5	6	7	8	9
TLM15	X	X	X	X	X	X	X	X	X
TLM16	X	X	X	X	X	X	X	X	X
TLM17									

### 1.9 Assessment strategies and methods

Assessment is the process of recording, storing, and providing information about student learning. The assessment ensures the principle of clarity, accuracy, objectivity, regularity and continuity. The assessment methods outlined in this training programme are associated with a detailed outline of each module constituting the training programme. The requirements and criteria of each assessment method of each module are designed in detail by the lecturers in charge of that course and communicated to students in the first session.

Following are the assessment methods applied in the training programme specialized in Management Information System:

- *Attendance Check (AM1)*

Along with self-study, the regular presence of students and their contributions throughout the course also reflects their attitudes towards the subject.

- *Work Assignment (AM2)*

Students are required to do assignments related to the lesson during and after class. These exercises can be completed by individuals or groups and are graded based on pre-announced criteria.

- *Oral Presentation (AM3)*

Students are required to do some content related to presentation activities during or after class. These activities are carried out by individuals or groups and are evaluated according to specific criteria (rubrics).

- *Performance test (AM4)*

Students are required to perform a number of specific and technical operations required by the subject's knowledge and skills.

- *Journal and blogs (AM5):*

Students are required to write blogs during the course reflecting tasks conducted and experience obtained throughout the study time.

- *Essay (AM6)*

Students are asked to answer a number of questions by giving personal opinions or standardised answers. This method is suitable for assessing subject-specific learning outcomes.

- *Multiple choice exam (AM7)*

Students are required to answer questions by selecting the suggested answers. This method mainly assesses students' knowledge related to the module.

- *Oral examination (AM8)*

Students' performance is assessed through interviews, direct questions and answers. This assessment method gives students opportunities to clarify their answers, therefore motivates students give their own ideas related to the questions.

- *Written report (AM9)*

Students are required to write reports related to specific topics. Reports could be written by individuals or groups. This method assesses students not only knowledge related to specific topics, but also the written communication skill.

- *Oral Presentation (AM10)*

This assessment method is very similar to the presentation method, but it is a summative assessment, which is conducted periodically (midterm, at the end of the term or after the course).

- *Teamwork (AM11)*

Group work assessment is used when carrying out group teaching activities and is used to assess students' teamwork skills. Group evaluation sheets and evaluation criteria are clearly announced.

- *Graduation Thesis/ Report (AM12)*

In this method, students are evaluated through a report to the Evaluation Council established by the university on the basis of the proposal of the Faculty. Students present their thesis report to the Council; the teachers review and the Council members comment and raise questions. Students answer questions directly at the thesis defense session. This method is used during the internship period to assess the overall capacity of students including knowledge, skills and attitudes towards those who are eligible to defend the thesis as prescribed. The Jury will assign a score according to

the Rubric provided by the Faculty/Department. Graduation thesis evaluation score is the average score of Council members, decided by the Council.

Table 5. The compatibility between assessing method and PLO

Assessment method	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
AM1	X	X	X	X	X	X	X	X	X
AM2	X	X	X	X	X	X	X	X	X
AM3	X	X	X	X	X	X	X	X	X
AM4	X		X	X	X	X	X	X	
AM5		X			X				X
AM6	X	X	X	X	X	X	X	X	X
AM7	X	X	X	X	X	X	X	X	X
AM8		X	X	X	X				X
AM9	X	X	X	X	X	X	X	X	
AM10	X	X	X	X	X	X	X	X	
AM11	X	X	X	X	X	X	X	X	

### 1.10 Scoring system

The scoring system to evaluate students of DUE is as follows:

- A 10-point scale is used to evaluate the course, including component scores, final exam scores and course scores. The course grade is equal to the sum of the component scores multiplied by the respective weights.

- The letter scale is used to classify learning results based on course scores.

- The 4-point scale is used when calculating the semester average and the cumulative GPA to evaluate the student's academic results after each semester and to give the student's total score.

Table 6. Scoring system of DUE

Classification		10-point scale	Letter scale	4-point scale
Qualified	Excellent	8.5 ÷ 10.0	A	4

	Good	7.0 ÷ 8.4	B	3
	Average	5.5 ÷ 6.9	C	2
	Below Average	4.0 ÷ 5.4	D	1
<b>Unqualified</b>	Weak	< 4.0	F	0

## 2 Curriculum Description

### 2.1 Curriculum structure

The curriculum is divided into 3 clusters of knowledge, including compulsory courses and electives with the corresponding number of credits in each cluster given in Table 7.

Table 7. Curriculum structure

#	Knowledge cluster	Number of credits		
		Total	In there	
			Compulsory	Elective
1	<b>General knowledge</b>	<b>43</b>	<b>43</b>	-
2	<b>Fundamental knowledge</b>	<b>24</b>	<b>24</b>	-
3	<b>Specialized and major knowledge</b>	<b>67</b>	<b>52</b>	<b>15</b>
3.1	<i>Specialized knowledge</i>	21	21	-
3.2	<i>Major knowledge</i>	36	21	15
3.3	<i>Graduation Internship</i>	10	10	-
<b>Total</b>		<b>134</b>	<b>119</b>	<b>15</b>

*The general knowledge cluster* provides students with the foundational knowledge and basic general skills, which are the premise for the courses of the fundamental, specialized and major in the programme. It is also a premise for advanced learning and lifelong learning for students after graduating from university.

*The foundational knowledge cluster* helps to supplement the basic general knowledge and skills of the economic and business sectors, which is the premise for the courses of the specialized and major in the training programme later.

*The specialized knowledge cluster* helps to supplement knowledge and skills related to the Management Information System industry such as: knowledge of algorithm design,

technical thinking in programming, knowledge of database system building, communication networks, analysis and design of information systems.

*The major knowledge cluster* helps students build and develop the necessary competencies in professional activities in the field of Management Information System, both in theory and in practice such as: analysis, consulting, implementation of IT solutions for overall business management; management and data mining; analysis and design of information systems; Planning and managing IT projects...

## 2.2 Course Structure

Table 8. Course and credit number

#	Course code	Course name	Credit num.	Time distribution (hour)		
				Theory	Practice*	Total
<b>A. General Knowledge</b>						
1	SMT1005	Marxist Leninist Philosophy	3	34	11	45
2	SMT1006	Political Economics of Marxism – Leninism	2	25	5	30
3	SMT1007	Scientific Socialism	2	24	6	30
4	SMT1008	History of Vietnamese Communist Party	2	24	6	30
5	SMT1004	Ho Chi Minh’s Ideology	2	24	6	30
6	LAW1001	General Law	2	21	9	30
7	TOU1001	Business Communication	3	30	15	45
8	MIS1002	Applied Information Technology for Management	3	22	23	45
9	MGT1001	Microeconomics	3	36	9	45
10	ECO1001	Macroeconomics	3	35	10	45
11	MGT1002	Management	3	30	15	45
12	ENGELE1	English Elementary 1	3	0	45	45
13	ENGELE2	English Elementary 2	4	0	60	60
14	ENG2015	English Communication 1	3	19	26	45
15	ENG2016	English Communication 2	3	19	26	45
16	ENG2017	English Composition B1	2	21	9	30
		<b>Total</b>	<b>43</b>	<b>364</b>	<b>281</b>	<b>645</b>

#	Course code	Course name	Credit num.	Time distribution (hour)		
				Theory	Practice*	Total
<b>B. Fundamental knowledge</b>						
17	ACC1002	Introduction to Accounting	3	30	15	45
18	MKT2001	Principles of Marketing	3	34	14	45
19	MIS2002	Management Information Systems	3	30	15	45
20	STA2002	Statistics for Business and Economics	3	33	12	45
21	FIN2001	Financial Markets and Institutions	3	30	15	45
22	MGT2002	Introduction to Business	3	27	18	45
23	IBS2001	International Business	3	28	17	45
24	LAW2001	Business Law	3	30	15	45
	<b>Total</b>		<b>24</b>	<b>242</b>	<b>121</b>	<b>360</b>
<b>C. Specialized and major knowledge</b>						
<b><i>C1. Specialized knowledge</i></b>						
25	MIS3001	Basic Programming	22	23	45	3
26	MIS2001	Database	22	23	45	3
27	MIS3002	Computer Networks and Data Communications	28	17	45	3
28	MIS3045	Object Oriented Programming	21	24	45	3
29	MIS3007	Information Systems Analysis and Design	21	24	45	3
30	MIS3006	Data Structures and Algorithms	28	17	45	3
31	MIS3008	Database Management System	27	18	45	3
	<b>Total</b>		<b>169</b>	<b>146</b>	<b>315</b>	<b>21</b>
<b><i>C2. Major courses: 36 credits (including 21 compulsory credits and 15 elective credits)</i></b>						
<b><i>a. Compulsory courses (21 credits)</i></b>						
32	MIS3003	Safety and Security of Information Systems	3	30	15	45
33	MIS3004	IT Project Management	3	24	21	45
34	MIS3009	Data Warehousing and Data Mining	3	26	19	45
35	MIS3011	Enterprise Resource Planning	3	19	26	45

#	Course code	Course name	Credit num.	Time distribution (hour)		
				Theory	Practice*	Total
36	MIS3041	Python for Data Analysis	3	18	27	45
37	MIS3047	Business Process Management	3	28	17	45
38	MIS2012	Career Internship	3	0	45	45
	<b>Total</b>		<b>21</b>	<b>145</b>	<b>170</b>	<b>315</b>
<i>b. Elective courses (15 credits): Choose at least 15 credits among following</i>						
39	MIS3030	Information System Analysis and Design - Practice	2	0	30	30
40	RMD3001	Research Methodology	2	30	0	30
41	MGT3003	Operation Management	3	21	24	45
42	HRM3001	Human Resource Management	3	37	8	45
43	COM3003	Customer Relationship Management	3	30	15	45
44	ACC2002	Management Accounting	3			45
45	MGT3020	Digital Transformation	3	21	24	45
46	MIS3034	Enterprise Resource Planning - Practice	2	0	30	30
47	ELC3006	Machine Learning	3	30	15	45
48	ELC3009	Web Data Mining	3	30	15	45
49	ELC3007	Data Visualization	3	30	15	45
50	ELC3008	Artificial Intelligence for Business	3	30	15	45
51	MIS3010	Web Programming	3	20	25	45
52	MIS3048	Web Design	3	20	25	45
53	MIS3021	Software Testing	3	30	15	45
54	MIS3012	Network Administrator	3	20	25	45
55	MIS3032	Application Programming - Practice	2	0	30	30
56	MIS2010	Awareness Internship	2	0	30	30
	<b>Total</b>		<b>15</b>			



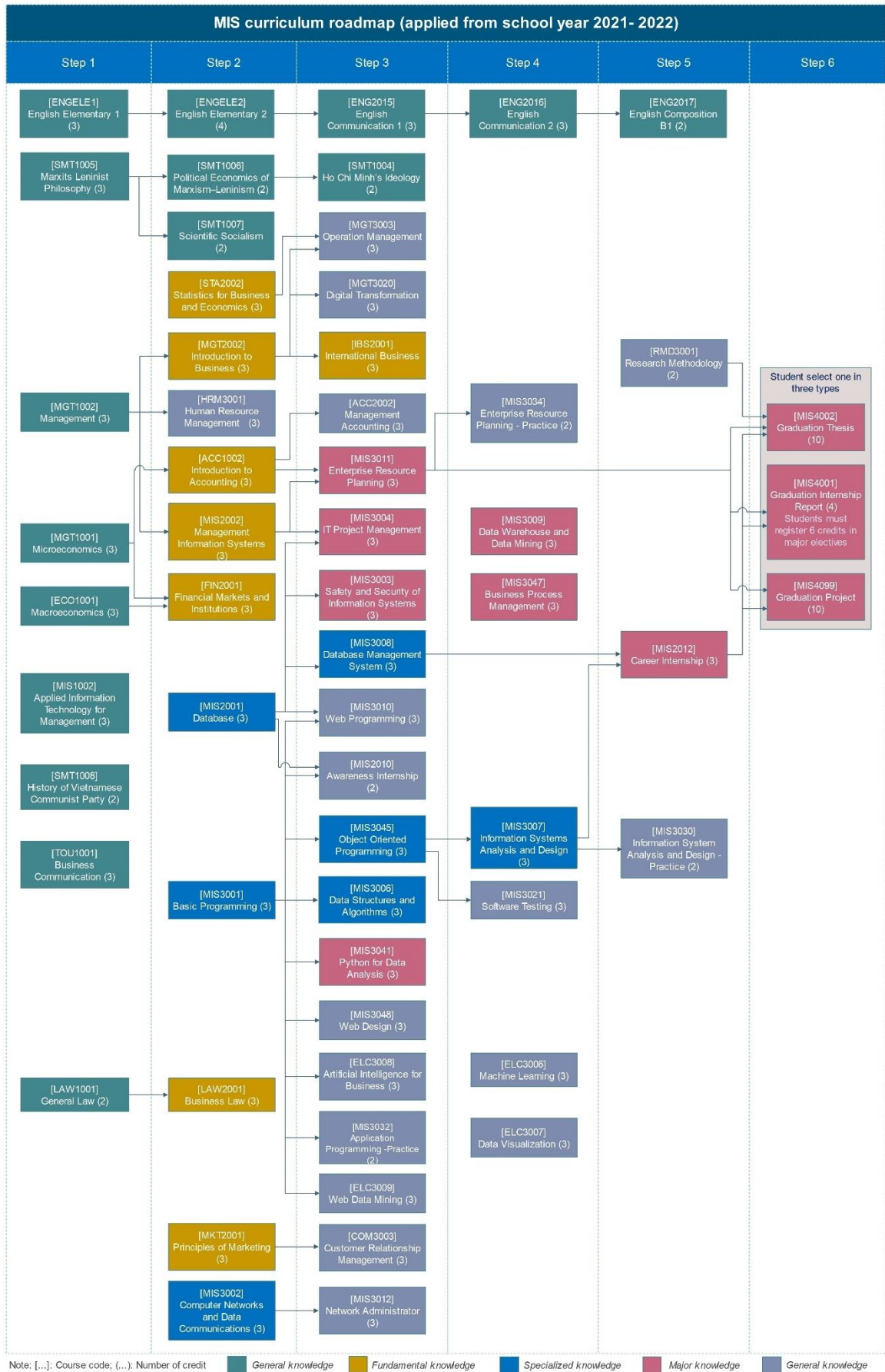


#	Course code	Course name	Credit num.	PLO																
				1		2		3		4		5			6		7	8	9	
				PI 1.1	PI 1.2	PI 1.3	PI 2.1	PI 2.2	PI 3.1	PI 3.2	PI 4.1	PI 4.2	PI 5.1	PI 5.2	PI 5.3	PI 6.1	PI 6.2			PI 9.1
6	LAW1001	General Law	2			I														
7	TOU1001	Business Communication	3													F A				
8	MIS1002	Applied Information Technology for Management	3												F A			I		
9	MGT1001	Microeconomics	3	M																
10	ECO1001	Macroeconomics	3	F A																
11	MGT1002	Management	3		I A															
12	ENGELE1	English Elementary 1	3															I		
13	ENGELE2	English Elementary 2	4															M		
14	ENG2015	English Communication 1	3															M		
15	ENG2016	English Communication 2	3															M		
16	ENG2017	English Composition B1	2															F A		
<b>B. Fundamental knowledge</b>			<b>24</b>																	
17	ACC1002	Introduction to Accounting	3	I	F A															
18	MKT2001	Principles of Marketing	3	I																
19	MIS2002	Management Information Systems	3		I				I		I	I	I					I		
20	STA2002	Statistics for Business and Economics	3	I																
21	FIN2001	Financial Markets and Institutions	3	I	I															
22	MGT2002	Introduction to Business	3	I																
23	IBS2001	International Business	3	I																
24	LAW2001	Business Law	3			I A														
<b>C. Specialized knowledge</b>			<b>57</b>																	
25	MIS3001	Basic Programming	3				I	I												
26	MIS2001	Database	3						I			F A	I							
27	MIS3002	Computer Networks and Data Communications	3							I										
28	MIS3045	Object Oriented Programming	3				M	F A					I							
29	MIS3007	Information Systems Analysis and Design	3					F A	F A		M	M	M	I						
30	MIS3006	Data Structures and Algorithms	3				F A	I					I							





## 2.4 Curriculum roadmap



## 2.5 Extracurricular activities

### 2.5.1 Course related extra-curricular activities

The training programme of Management Information Systems has diverse extracurricular activities corresponding to the output standards to support students to build and develop skills, abilities and attitudes. Subject-related extracurricular activities include field trips to industry-related businesses. In addition, students have an opportunity to discuss with businesses on topics related to the learning content.

### 2.5.2 Other extracurricular activities

Besides teaching, the Faculty also organizes many extra-curricular activities for students as follows:

- Activities organized by the Faculty Branch such as welcome ceremony for freshmen, volunteer trips (for example: Dreaming Winter - volunteer trip in remote areas), dance competitions...

- Extracurricular activities organized by the Faculty to enhance soft skills to prepare for recruitment such as: preparing CV, preparing interviews for internships, applying for jobs, and writing cover letters.

## 2.6 Referenced domestic & foreign training programs

#	Specialized course	Program me 1	Program me 2	Program me 3	Program 4	Program me 5	Program me 6	Program me 7
1	Basic Programming	C	C	C	C	C		X
2	Database	C	C	C	C	X	C	X
3	Computer Networks and Data Communications	X	C	C	X	C		X
4	Object Oriented Programming		C		X			
5	Information Systems Analysis and Design	C	C	X	C	C		C
6	Data Structures and Algorithms	C	C	C		C		
7	Database Management	X	C		X	C	X	C
8	Safety and Security of Information Systems	C	C			X		X
9	IT Project Management	C	C	C		C	X	X
10	Data Warehousing and Data Mining	C	X	X	X		C	X
11	Enterprise Resource Planning	X	X		X	X	X	X
12	Python for Data Analysis	C				X		

13	Business Process Management	X	X				X	X
14	Career Internship	X			X		X	X
15	Research Methodology	C				X		
16	Operation Management			X	X	X		
17	Human Resource Management	C	C	X	C	X		
18	Customer Relationship Management		X	X	C	X		
19	Management Accounting	C	X		C	X	C	C
20	Digital Transformation			X	X	X		
21	Enterprise Resource Planning - Practice	X	X					X
22	Machine Learning		X			C		
23	Web Data Mining			X				
24	Data Visualization						C	X
25	Artificial Intelligence for Business	X						
26	Web Programming	X	X	X	X	X	X	X
27	Web Design	X	X	X	X	X	X	X
28	Software Testing	C						
29	Network Administrator	X		X		X		
30	Application Programming - Practice		X	X	X	X		X
31	Awareness Internship			X		X	X	X
32	Graduation Internship	X	X	X	x			

*C: Close, X: Yes*

- Programme 1: Management Information Systems Programme - University of Economics and Law, Vietnam National University, Ho Chi Minh City
- Programme 2: Management Information System - Hanoi University of Commerce
- Programme 3: Management Information System - Hanoi National Economics University
- Programme 4: Business Information System - University of Economics Ho Chi Minh City
- Programme 5: Information systems and management- University of London (Anh)
- Programme 6: Management Information Systems - Washington State University (USA)
- Programme 7: Management Information Systems - The University of Tampa, Florida (USA)

## **2.7 Course description**

### **1. *SMT1005 - Marxist-Leninist Philosophy (3 credits)***

The Marxist-Leninist Philosophy module provides learners with basic knowledge of Marxist-Leninist philosophy, helps learners understand the basic contents of dialectical materialism, materialistic dialectic, historical materialism. The module plays an important role in creating foundation knowledge for learners, practicing thinking to develop skills. The purpose of this module is to equip the worldview, the worldview, and the methodology of Marxist-Leninist philosophy, helping learners have a correct view of society and people. Through the contents of Marxist-Leninist philosophy, the module helps learners to have a method of solving practical problems.

### **2. *SMT1006 - Political Economics of Marxism – Leninism (2 credits)***

The course is structured into 2 main parts: (1) To study the political economic problems of the capitalist mode of production in both the free competition and the monopoly stage; (2) To study on socialist-oriented market economy issues and economic relations of interest in Vietnam: Industrialization, modernization and international economic integration of Vietnam.

### **3. *SMT1007 - Scientific Socialism (2 credits)***

The module is structured into two main parts: (1) To study the most core issues about socialism science, one of the three constituent parts of Marxism-Leninism; (2) To study on political - social issues of Vietnam related to socialism and the path to socialism in Vietnam.

### **4. *SMT1008 - History of Vietnamese Communist Party (2 credits)***

The module helps students understand the foundation of the Communist Party of Vietnam; the people's democratic revolution and socialist revolution, especially the "Đổi mới" period; Orienting students to strive according to the Party's goals and visions; to raise the sense of civic responsibility to the society, to abide by the Party and State's undertakings and laws; Practice theoretical thinking style associated with practice; promote students' dynamism and creativity in applying specialized knowledge to solve economic, political, social problems...according to the Party's line and policies.

### **5. *SMT1004 - Ho Chi Minh's Ideology (2 credits)***

*Prerequisite: SMT1005 - Marxist-Leninist Philosophy, SMT1006 - Marxist-Leninist Political Economics*

Ho Chi Minh's ideology is a science providing student with the basic knowledge of Ho Chi Minh's ideology which is a creative application of Marxism-Leninism in



the context of Vietnam; theoretical basis of the planning of guidelines of Vietnam revolution from 1930 up to present. The course enables student to understand relatively sufficiently and systematically the historical social context, basis of the formation and the development of Ho Chi Minh's Ideology; the basic contents of the Ho Chi Minh's thoughts on issues such as: ethnicity, national liberation revolution; socialism etc. The course helps the learners' form the scientific and revolutionary points of view, consolidate their persistence with the road chosen by Ho Chi Minh and the Party.

#### **6. LAW1001 - General Law (2 credits)**

General Law Course is designed to provide learners with the most basic knowledge about the Government and the Law. Basic contents of the course include: General issues of the Government and Law such as the Government apparatus, Legal Norms and Relationships, Legal violations, etc. In addition, the course also provides to learners some basic knowledge about corruption Anti-Corruption.

#### **7. TOU1001 - Business Communication (3 credits)**

- Provide learners with basic knowledge of the art of communication in business.

- Provide learners with principles and guidelines on the use of basic communication skills in order for them to communicate effectively, legally and ethically in a business context.

- Provide learners with principles and guidelines on the use of basic communication skills in the workplace ranging from those needed for job interviews to those necessary to adapt to the new working environment, as well as on the implementation of basic office administrative operations.

This course consists of 12 chapters. Each chapter covers a full range of the following components: objectives, contents, real-world situations, case studies, chapter summaries and reviewing questions.

#### **8. MGT1001 - Microeconomics (3 credits)**

The content of the course consists of eight chapters, mainly introducing the basic economics issues and economics. Microeconomics not only researches on selection decisions of buyers and seller but also examines the impact of tax on buyers and sellers. After that, the course separately focuses on selection decisions of buyers and sellers respectively. Selection decisions of buyers and sellers are considered in each market form: perfectly competitive market, monopoly market, oligopoly market and monopolistic competition.

### **9. ECO1001 - Macroeconomics (3 credits)**

Macroeconomics studies how societies use scarce resources in production and distribution to meet fully human needs. The course provides students with basic knowledge of macroeconomics. Including Basic principles of economics; Basic macroeconomic indicators; Economic growth and how to generate the output of the economy; Aggregate supply, aggregate demand; Unemployment and inflation; The mechanism of operation of the loanable funds market, labour market, money market, foreign exchange market ... in the long term. The course helps students understand the economic fluctuations and equilibrium mechanisms of the economy in the short and long term as well as the impact of policies on the economy.

### **10. MGT1002 - Management (3 credits)**

Managers in any organizations (business, non-business) and in any fields (human resources, manufacturing, finance, marketing, etc.) have to carry out many management activities through the process of planning, organizing, leading and controlling. In this module, learners are provided with a clear understanding of how a manager executes the management process to efficiently and effectively achieve organisational goals in a specific environment.

### **11. MIS1002 - Applied Information Technology for Management (3 credits)**

The course arms with knowledge for students about the core of information technology and communication that is needed for the learning, research and application in economics and business. The knowledge includes safety and security of information, basic knowledge of new technologies in digital transformation trends. The course also updates modern technology trends, which are applied in economics and business. The students are also trained in organization, works management and teamwork skills with support of the Internet environment.

The course also educates students about skills of collecting, processing and analyzing data that are applied in economic and business activities, skills of creating documents and presentation professionally.

### **12. ENGELE1 - English Elementary 1 (3 credits)**

This module is designed to integrate between 4 skills: Listening, Speaking, Reading, Writing and Grammar, Vocabulary, and Sound Practice exercises. The content of the module is presented in 5 lessons (5 units), each unit includes small lessons (lessons) on vocabulary and listening comprehension skills (with multiple-choice exercises, completing sentences/schematics/tables); reading comprehension skills (with multiple-choice forms, information concatenation, short answers, completing diagrams); discussion skills, presenting personal views in Short personal writing, short advertising writing, short email writing, describing a favorite place,

writing instructions, instructions...) at the first level in the elementary level. After each lesson, students are practiced and practiced with materials for face-to-face learning and online practice resources. This module helps students understand and use familiar daily structures, basic words to meet specific communication needs. Students can introduce themselves and others; can respond to information about themselves such as where they live, family and friends. Students can communicate simply if the interlocutor speaks slowly and clearly.

### ***13. ENGELE2 - English Elementary 2 (4 credits)***

*Prerequisite ENGELE1- English Elementary 1*

This module is designed to integrate between 4 skills: Listening, Speaking, Reading, Writing and Grammar, Vocabulary, and Sound Practice exercises. The content of the module is presented in 6 lessons (6 units), each unit includes lessons on vocabulary skills; listening comprehension skills (listening to frequently used sentences and structures related to basic communication needs with multiple-choice exercises, completing sentences/schematics/tables); reading comprehension skills (reading sentences and structures that are often used in relation to basic communication needs with Information, short answers); speaking skills (exchange information on simple, familiar everyday topics, simple descriptions of yourself, surroundings and essential issues); writing skills (with types of grammar and writing exercises (complete sentences, write sentences, write short paragraphs about family, living conditions, notes, emails, a thank you message, know how to write a personal blog about travel, online messages, comment on some Entertainment, appearance, fashion...)) After each lesson, students can practice and practice with materials for face-to-face learning and online practice resources.

### ***14. ENG2015 - English Communication 1 (3 credits)***

*Prerequisite: ENGELE2- English Elementary 2*

This course integrates Listening, Speaking and Reading English skills to provide learners with the opportunity to develop English proficiency at level B1 according to the European foreign language proficiency standard framework. The main textbook used for the subject has an authentic language source, is diverse in topics and includes many rich communication activities. Therefore, students are equipped with many English language means to communicate, express ideas in many different topics and improve their cooperation and creative thinking skills. In particular, this subject also focuses on helping learners know how to use and practice master basic techniques and strategies in presentation skills. As a result, learners can develop confidence and fluency in expressing their ideas in front of the crowd.

**15. ENG2016 - English Communication 2 (3 credits)**

*Prerequisite: ENG2015 - English Communication 1*

This module integrates English Listening, Speaking, Reading and Writing skills to equip learners with the foundation and language skills at level B1 according to the European foreign language proficiency standard framework. In particular, based on modern resources and close to the socio-economic situation, students will build language capacity and develop language skills applied in real social situations to give personal opinions as well as develop reasoning ability. Besides, presentation skills are also added to this module to help students confidently present their ideas fluently in English.

**16. ENG2017 - English Composition B1 (2 credits)**

*Prerequisite: ENGELE2 - English Elementary 2*

The module consists of 11 lesson units built with a duration of 2 periods/1 lesson unit for the aim of helping learners systematize common types of exercises in a European Framework B1 Level Writing test. Each lesson unit includes technical instructions for doing the test with practical exercises, reinforcement in class and a proposal for additional self-study materials outside of class hours.

**17. ACC1002 - Introduction to Accounting (3 credits)**

*Prerequisite: MGT1001 - Microeconomics*

Accounting data lays the foundation for decision making in any organization. Therefore, having the basic understanding and knowledge of accounting theory as well as application is important for many practitioners in the business sector. This course provides learners with basic knowledge of principles and application of financial accounting so that they can understand how accounting information is processed and used in the decision making of enterprises. The major part of the course includes accounting balance and accounting information process, accounting methods to the main business processes, closing process and preparation of financial statements.

**18. MKT2001 - Principles of Marketing (3 credits)**

This course is designed to serve as an introduction to the basic principles of marketing, practices, and the application of these practices in today's business world. Upon satisfactory completion of this course, students will be able to demonstrate comprehension and application of the following skills:

- Define the term marketing and other key concepts such as customer need, target markets, etc.

- Analyze market opportunities: environmental analysis, industry and competitor analysis, identification and evaluation of consumer and organizational needs and behaviors.

- Demonstrate an integrative understanding of the marketing activities in organizations: objective setting, marketing strategies, market mix components, and finally implementation and control mechanisms.

**19. MIS2002 - Management Information Systems (3 credits)**

*Prerequisite: MGT1002 - Management*

The course introduces students to the basic knowledge of information systems, types of information systems in enterprises; methods of building information systems and the process of implementing projects to develop information systems in enterprises. Thereby helping students to be aware of the essence, role and value of information systems in managing business processes and supporting decision making for businesses in the era of Industry 4.0.

**20. STA2002 - Statistics for Business and Economics (3 credits)**

The course provides knowledge and cultivates skills on statistical methods for collecting, organizing, presenting, analysing and interpreting data on phenomena in business and economics, thereby supporting to make decisions. Subjects of the course include: introducing applications and terms of statistics, descriptive statistics, random variables and probability distribution, sampling and estimating parameters from sample data, testing hypotheses, analysing the relationship between variables, analysing time data, methods calculating index, forecasting the future of phenomena, analysis of variance on the experimental design models.

**21. FIN2001 - Financial Markets and Institutions (3 credits)**

*Prerequisite: ECO1001 – Macroeconomics, ECO1001 – Macroeconomics*

The module provides a detailed analysis of the contemporary structure of financial systems including current markets, financial institutions and key market participants. Specifically, students will be equipped with knowledge of financial markets focusing on debt, equity and derivatives markets. At the same time, the module also introduces students to financial institutions, including commercial banks and non-bank operations. In addition, students will be able to explore interest rates - a fundamental element of financial markets - and the activities of central banks.

**22. MGT2002 - Introduction to Business (3 credits)**

*Prerequisite: MGT1002 - Management*

Introduction to Business module is designed to provide learners with the basic concepts and fundamentals of how to establish and manage a business. Regard to students in Business Administration major, this module gives students the first fundamentals, creating the foundation for further study in business and management fields. For non-business students, Introduction to Business module assists students to obtain the business fundamentals. Therefore, although students graduate from any majors, they can confidently start up and manage their own businesses.

This module consists of 6 chapters. The first chapter gives the introduction of business, business environment, business ethics as well as social responsibilities. Chapter 2 provides the fundamentals related to type of enterprises' selections, entrepreneurship stimulation and entrepreneurship. The following chapters focus on the basic knowledge of the 4 main activities in the company such as: Production management, human resource management, marketing management and accounting activities.

**23. IBS2001 - International Business (3 credits)**

*Prerequisite: MGT2002 - Introduction to Business*

When doing business in the international context, managers and corporates have to deal with the differences in political-economic and cultural environments. Besides, governments' discrimination between domestic and foreign companies is a significant issue in global commerce and investment. This course provides students with knowledge on the political-economic and cultural differences; the drivers of trade and investment policies and ways that companies deal with these challenges.

**24. LAW2001 - Business Law (3 credits)**

*Prerequisite: LAW2001 Business Law*

Business Law is a course that helps students master the law and better understand the role of the various types of enterprises, business entities, contracts and corporate bankruptcies; It also helps students to identify the position and the role of institutions that affect economic activities in our country. The course presents the basic issues of business entities in accordance with the provisions of Vietnamese law, contractual provisions; regulations on settlement of disputes in business and commerce; and regulations on bankruptcy of enterprises, and cooperatives.

**25. MIS3001 - Basic Programming (3 credits)**

This course aims to equip learners with comprehensive knowledge of programming languages, fundamental principles of programming techniques, and the

development of applications on various platforms. In addition, the course provides learners with proficient programming skills in the Python programming language, helping them develop skills in logical thinking, flow control, precision, and analyzing problems and modeling them into algorithms. These skills enable learners to transform problems into computer programs, serving as a foundation for building IT applications for business and management purposes.

**26. MIS2001 - Database (3 credits)**

- This course provides learners with fundamental knowledge about databases, data models such as the Entity-Relationship model, and the Relational Data model, enabling them to model information systems and design databases.

- The course also provides learners with the knowledge to manage data dependencies, normalize data, and address issues related to the theory of relational database design, which is crucial in database design. Additionally, learners are equipped with the SQL data query language to perform query operations on relational databases, such as defining data structures, updating data, searching for data, aggregating data, and ensuring data security

**27. MIS3002 - Computer Networks and Data Communications (3 credits)**

- The course provides students with a comprehensive understanding of data communication activities on computer networks, ranging from fundamental to advanced knowledge. Based on this foundation, learners will also gain insights into the crucial applications of computer networks in business operations and management.

- The course also equips learners with essential skills to work in a computer network environment and design computer networks for small and medium-sized organizations and businesses.

**28. MIS3045 - Object Oriented Programming (3 credits)**

*Prerequisite: MIS3001 - Basic Programming*

The in-depth course introduces the object-oriented approach to programming, with Python as the illustrative language. The objective is to provide students with a solid understanding of fundamental concepts of object-oriented programming, such as objects, classes, methods, inheritance, polymorphism, and interfaces, accompanied by fundamental principles of abstraction, modularity, and reusability in object-oriented design.

**29. MIS3007 - Information Systems Analysis and Design (3 credits)**

*Prerequisite: MIS3045 - Object Oriented Programming*

The course aims to equip students with foundational and advanced knowledge of the process of analyzing and designing an information system, in which the subject approaches systems using modern object-oriented methods and the Unified Modeling Language (UML) for system specification. It helps students gain a comprehensive understanding of the process of constructing an information system, from requirements gathering to system deployment, through analysis and design diagrams.

The course emphasizes practical skills and helps students master object-oriented techniques and software development methodologies. It covers topics such as analysis and requirements gathering (including user interviews), system design and architecture, implementation, testing, deployment, and the use of UML-based specification tools.

### **30. MIS3006 - Data Structures and Algorithms (3 credits)**

*Prerequisite: MIS3001 - Basic Programming*

The course equips learners with basic and advanced knowledge about algorithms, thinking methods, algorithm design, common types of data structures and algorithms on those data structures.

Learners are equipped with skills in using data structures to organize and store data on computers and design optimal algorithms, including: List, Array, Linked List, Stack, Queue, Tree

### **31. MIS3008 - Database Management System (3 credits)**

*Prerequisite: MIS2001 – Database*

The course provides students with fundamental and in-depth knowledge of database management, the development trends of database management systems, as well as knowledge of security for databases. These knowledge areas are particularly important and support the management and decision-making based on data analysis in large data management systems.

- Additionally, the course equips students with skills in organizing, exploiting, and managing databases on database management systems, as well as programming techniques for database exploitation.

### **32. MIS3003 - Safety and Security of Information Systems (3 credits)**

*Prerequisite: MIS3002 - Computer Networks and Data Communications, MIS2001 - Database*

The course equips learners with foundational knowledge of information security and system security. It includes knowledge of information security theory, analysis of information security risks, encryption and information security technologies,



access control techniques, and methods for developing information security policies in enterprises. Additionally, the course provides practical skills in information system security and safety, such as intrusions techniques and countermeasures in modern information system intrusion.

### **33. MIS3004 - IT Project Management (3 credits)**

*Prerequisite: MIS2001 - Database, MIS2002 - Management Information Systems*

The course provides learners with an overview of the information technology (IT) project development process and core knowledge in IT project management, including time management, cost management, scope management, and risk management. The course also equips learners with skills and tools to effectively manage an IT project according to real-world requirements.

### **34. MIS3009 - Data Warehousing and Data Mining (3 credits)**

The application of information technology in management information systems of social and business organizations is not only for storage, but also for optimization query and analysis on big data. Difference in the operational database, the data warehouse is built towards professionals of the organization and discovery on the big data effectively. Data mining supports to find useful knowledge based that data to support decision making.

- This course is designed to serve learners with basic knowledge about data warehouses such as architectures, data models, Online Analytical Processing. That may optimize storage and query data.

- The algorithms, new techniques are also presented in the course to support learners pre-processing, knowledge mining on the data warehouse effectively

### **35. MIS3011 - Enterprise Resource Planning (3 credits)**

*Prerequisite: MIS2002 - Management Information Systems, ACC1002 - Introduction to Accounting*

The module systematically equips learners with the theory of enterprise resource planning, helping students understand the main features of the ERP system, the basic business processes in each module and the integration between subsystems.

This module also helps learners to develop skills in implementing ERP systems in enterprises, skills to practice basic business processes in purchasing, sales, finance, accounting and management modules. production, human resource management, etc. on an ERP system like SAP B1/ODOO.

### **36. MIS3041 - Python for Data Analysis (3 credits)**

The course aims to equip learners with knowledge and skills in data analysis from various types of data using the Python language. The results of data analysis help managers understand the market, customers, and support businesses in forecasting and business planning. Learners acquire the knowledge of data preparation for analysis, perform statistical analysis, visualize and model data, and build machine learning models to support decision-making for managers. In addition, real-life scenarios and practical exercises based on business data are also taught to enhance the learners' knowledge and skills.

### **37. MIS3047 - Business Process Management (3 credits)**

In the era of digital transformation, managing and transforming business processes towards automation, partial or complete digitization of processes, or interoperability between processes is a practical need for organizations and businesses. This requires business processes to be described in a visual, consistent, scientific manner, enabling process reuse across departments within the organization and enterprise.

This course equips students with knowledge in the field of process modeling and visualization using a consistent syntax to improve, optimize, and automate business processes. The course also provides skills in using software to represent, analyze, and monitor business processes. As a result, learners can propose solutions to optimize business processes.

### **38. MIS2012 - Career Internship (3 credits)**

*Prerequisite: MIS3007 - Information system analysis & design; MIS3008 – Database Management System*

Learners will participate in business and production activities with practical projects in companies/organizations, which will help them:

Understand and grasp practical issues related to their specialized field of training.

Apply knowledge related to Management Information System to understand and explain practical issues and complete assigned tasks at internship units.

Develop skills in problem identification, research, critical thinking, creativity, and other skills related to their specialization.

**39. MIS3030 - Information System Analysis and Design - Practice (02 credits)**

*Prerequisite: MIS3007 - Information Systems Analysis and Design*

The course focuses on practical skills that help learners apply the knowledge of system analysis and design to specific practical projects. As a result, learners can conduct surveys to elicit requirements for practical systems, analyze and design information systems using the UML language.

**40. RMD3001 - Research Methodology (2 credits)**

This course provides students with the necessary knowledge and a guide to the research process in management, with a focus on financial management. The covered contents include formulating the research topic, designing the research, collecting and analysing data, and writing a project report. Students will also be equipped with necessary skills to be able to undertake their own research project.

**41. MGT3003 - Operation Management (3 credits)**

*Prerequisite: MGT1002 – Management, MGT2002 - Introduction to Business, STA2002 - Statistics for Business and Economics*

Production is one of the important functions to create the added value for every organization. Operations management is managing entire transform process from inputs to outputs. Operations management directly affects the use, transformations of resources and assets for high quality products/services, hence, the market demand is met and the firm's efficiency is enhanced.

This course is focused on analysis the components of the production system in order to gain the competitive advantages in terms of quality, dependability, cost, speed and variability. Operations management course supplies students the knowledge and skills to create production plans, understand the carrying out and controlling the production system of the organization. After finishing this course, students will master the production strategy, production planning and controlling, inventory management and be able to deal with the real business situations.

**42. HRM3001 - Human Resource Management (3 credits)**

*Prerequisite: MGT1002 - Management*

This course analyses the main functions of human resource management including human resource planning, job analysis and design, recruitment, training and development, performance management, salaries and benefits. The focus of the course is to equip students with the knowledge about human management within the

organization in order to achieve the best results for the organization and increase customer satisfaction and employee development.

This course strengthens group discussion activities, helps students reach vivid situations and practices of human resources' activities, thereby developing practical skills and essential qualities for future human resource executives.

**43. COM3003 - Customer Relationship Management (3 credits)**

*Prerequisite: MKT2001 - Principles of Marketing*

Customer relationship management provides knowledge and skills for students with the aim of identifying valuable customers, saving and boosting the customer value as well as creating competitive advantage for businesses. The module focuses on the specific issues of customer relationship management (CRM) at the analytical and operational levels. Based on customer database, businesses can identify and differentiate customers in value and demand perspectives as well as interact and treat different customers in a different way based on understanding these differences. In addition, on the basis of exploiting customer data, businesses can also set up and deploy key marketing programs according to individual customers or customer groups.

**44. ACC2002 - Management Accounting (3 credits)**

*Prerequisite: ACC1002 - Introduction to Accounting*

The management accounting course helps learners to deeply understand the nature, functions, content and methods of management accounting. Specifically, the module provides a list of lessons related to cost classifications, costing methods, cost estimation aligned with output and profitability for students. In addition, analysing appropriate data to support the decision process of the administrator is also one of the most pivotal concern.

**45. MGT3020 - Digital Transformation (3 credits)**

The Digital Transformation course introduces learners to the general concepts and knowledge of digital transformation. Based on the knowledge of digital transformation, the course will provide the necessary knowledge and skills to build a digital transformation strategy and roadmap in organizations and businesses. It emphasizes the importance of people and strategies to successfully implement digital transformation, creating a competitive advantage for the organization in the context of digitalisation. From there, learners can evaluate digital transformation plans in different areas of the organization.

**46. MIS3034 - Enterprise Resource Planning - Practice (2 credits)**

*Prerequisite: MIS3011 – Enterprise Resource Planning*

This course helps learners develop skills in implementing ERP systems within enterprises, skills in customizing/adapting business processes in modules such as finance, accounting, production management, human resource management, etc., on an ERP software system to meet the actual needs of each enterprise.

**47. ELC3006 - Machine Learning (3 credits)**

*Prerequisite: MIS3001 - Basic Programming*

The course serves learners with basic to advanced knowledge and skills in machine learning, helping learners to apply machine learning models to data analysis and forecasting. The course focuses on key topics such as an introduction to machine learning; application of machine learning in data analysis; machine learning model deployment process; popular machine learning methods such as Regression, K-Nearest Neighbor, Naïve bayes, Nueral Netwrok, Data clustering, Feature extraction; Practice implementing machine learning methods with Python.

**48. ELC3009 - Web Data Mining (3 credits)**

The purpose of this course is to equip students with specialized knowledge and skills in extracting valuable information and knowledge from websites, web content, and usage logs. The course provides in-depth understanding of algorithms and techniques used in Web Data Mining and ensures proficiency in the tasks involved: Web structure mining, Web content mining, and Web usage mining. Students are required to analyze and understand the problems, structures, and operations of web search systems and web classification. The course aims to provide students with a comprehensive understanding of web data mining and its practical applications

**49. ELC3007 - Data Visualization (3 credits)**

This course provides an overview and principles of data visualization. Learners understand and apply methods and processes of data visualization, proficiently use tools to visualize data, and have the ability to implement data visualization solutions with real business data. Additionally, learners are also equipped with soft skills such as problem identification and solutions, report writing and presentation, and teamwork.

**50. ELC3008 - Artificial Intelligence for Business (3 credits)**

*Prerequisite: MIS3001 - Basic Programming*

The Industrial Revolution 4.0 has been and is changing production and management methods in the economy, and also in state management. This revolution relies on the application of technologies such as artificial intelligence (AI) and big

data. Therefore, the application of AI to exploit data and build forecasting models based on data aims to support decision-making for managers in particular and create a competitive advantage for businesses and organizations in general. This course equips learners with an overview of AI and introduces basic techniques of AI. Furthermore, learners grasp the models of AI applied to solving business problems as well as realize the benefits of AI in supporting business operations.

**51. MIS3048 - Web Design (3 credits)**

This course aims to provide students with the necessary knowledge and skills to build basic web applications that run directly in the user's web browser. It covers fundamental concepts of interface design and user experience (UI/UX), as well as essential languages such as HTML, JavaScript, CSS, jQuery, and leveraging Bootstrap libraries for responsive design. Students will also be introduced to popular web design software tools currently in use.

**52. MIS3010 - Web Programming (03 credits)**

*Prerequisite: MIS3001 - Basic Programming*

This course aims to equip students with fundamental knowledge in the analysis and design of web applications using the ASP.NET technology platform and the C# programming language. Specifically, it covers an overview of web technologies, methods for developing modern web applications using the three-tier architecture model, and emphasizes practical skills in analyzing and designing web applications.

The course focuses on practical skills such as interface design, programming web applications using server-side programming languages interacting with databases, and deploying websites and web applications on web servers in the Internet environment.

**53. MIS3021 - Software Testing (3 credits)**

*Prerequisite: MIS3001 - Basic Programming; MIS3007 - Information Systems Analysis and Design*

This course provides learners with the concepts of software testing, classification of testing techniques, and their application in software development processes. It covers static testing techniques such as inspection and proof of correctness, as well as dynamic testing techniques including functional testing (such as boundary testing, equivalence class testing) and structural testing (such as control flow and data flow-based testing).

The course also equips learners with skills in using testing tools, particularly open-source tools and their applications.

**54. MIS3012 - Network Administrator (03 credits)**

*Prerequisite: MIS3002 - Computer Networks and Data Communications*

This course aims to provide students with knowledge ranging from basic to advanced levels in network administration. It covers concepts and knowledge related to network management planning, network security policies, network management models, and analysis of different phases in network administration.

The course delves into equipping students with practical skills for the work of a network administrator in organizations and enterprises. It focuses on providing the necessary skills to design and manage small to medium-sized internal networks.

**55. MIS3032 - Application Programming - Practice (2 credits)**

*Prerequisite: MIS2001 - Database*

This course aims to provide students with in-depth knowledge of programming on various platforms to serve management and business activities.

The course emphasizes hands-on skills development, focusing on building proficient skills in developing mobile system applications, web applications, desktop applications, and more. This is achieved through practical projects carried out in real business environments.

**56. MIS2010 - Awareness Internship (2 credits)**

*Prerequisite: MIS2001 – Database, MIS3001 - Basic Programming*

Learners will have the opportunity to explore and participate in practical activities in enterprises, which will help them identify and align their career paths based on their abilities and personal preferences.

Learners will:

- Engage with companies/organizations and gain an understanding of their culture, business operations, job opportunities, job positions, and required soft skills and specialized skills for those positions.
- Learn about new technologies.
- Understand and grasp practical issues related to their specialized field of training and complete assigned tasks during the internship.
- Develop skills in problem identification, research, critical thinking, creativity, and other skills related to their specialization.

**57. MIS4099 - Graduation Project (10 credits)**

*Prerequisite: MIS2012 - Career Internship, MIS3011 - Enterprise Resource Planning*

Learners will participate in exploring tasks at the internship organization, thereby developing practical skills, abilities to apply knowledge to analyze, evaluate, and propose solutions to practical problems.

- Gaining understanding of the organization's structure, process of performing tasks and task implementation at the internship organization.

- Completing a graduation project and accompanying deliverables (programme, documentation, ...) during the process of conducting the research topic.

- Developing skills in problem identification, research, critical thinking, creativity, and other skills relevant to the MIS programme.

## **2.8 Programme performing guideline**

### **2.8.1 General guideline**

The training programme in Management Information Systems has been applied since 2012.

The teaching process is designed based on the structure of the programme, input from faculty members in the Faculty, and specific requirements for each module. For elective modules, the Faculty guides students to choose the most suitable Modules to adapt to real-life conditions and social requirements.

The Dean is responsible for organizing and guiding the process of formulating and developing detailed course outlines to suit the goals, content, admission criteria, and needs of students and society.

The programme structure is reviewed and updated annually to accommodate changes, the training programme description is reviewed and can be changed to suit the needs of the stakeholders.

### **2.8.2 Programme under specific mechanisms**

*Types of classroom organization:* Courses can be organized in one of the following four types:

- **Type [1]:** Full time students study at the University;
- **Type [2]:** Students study at University + practice with the participation of experts from enterprises (referred to as experts);
- **Type [3]:** Students accumulate certificates at enterprises to exchange grade for the corresponding course;



- **Type [4]:** The entire time students will study at the enterprise.

Courses have an expert's teaching if are organized in the type [2] or [3] or [4].

The programme structure is deployed under specific mechanisms that is showed in Table 9.

Table 9. Courses which have expert's teaching

#	Course code	Course name	Credit number	Type	Training credit number	
					DUE	Enterprise
<b>A. General knowledge</b>			<b>43</b>		<b>43</b>	<b>0</b>
1	SMT1005	Marxist Leninist Philosophy	3	[1]	3	0
2	SMT1006	Political Economics of Marxism – Leninism	2	[1]	2	0
3	SMT1007	Scientific Socialism	2	[1]	2	0
4	SMT1008	History of Vietnamese Communist Party	2	[1]	2	0
5	SMT1004	Ho Chi Minh's Ideology	2	[1]	2	0
6	LAW1001	General Law	2	[1]	2	0
7	TOU1001	Business Communication	3	[1]	3	0
8	MGT1001	Applied Information Technology for Management	3	[1]	3	0
9	ECO1001	Microeconomics	3	[1]	3	0
10	MGT1002	Macroeconomics	3	[1]	3	0
11	MIS1002	Management	3	[1]	3	0
12	ENGELE1	English Elementary 1	3	[1]	3	0
13	ENGELE2	English Elementary 2	4	[1]	4	0
14	ENG2015	English Communication 1	3	[1]	3	0
15	ENG2016	English Communication 2	3	[1]	3	0
16	ENG2017	English Composition B1	2	[1]	2	0
<b>B. Fundamental knowledge</b>			<b>24</b>		<b>24</b>	<b>0</b>
17	ACC1002	Introduction to Accounting	3	[1]	3	0
18	MKT2001	Principles of Marketing	3	[1]	3	0

#	Course code	Course name	Credit number	Type	Training credit number	
					DUE	Enterprise
19	MIS2002	Management Information Systems	3	[1]	3	0
20	STA2002	Statistics for Business and Economics	3	[1]	3	0
21	FIN2001	Financial Markets and Institutions	3	[1]	3	0
22	MGT2002	Introduction to Business	3	[1]	3	0
23	IBS2001	International Business	3	[1]	3	0
24	LAW2001	Business Law	3	[1]	3	0
<b>C. Specialized knowledge</b>			<b>21</b>			
25	MIS3001	Basic Programming	3	[1]	3	0
26	MIS2001	Database	3	[1]	3	0
27	MIS3002	Computer Networks and Data Communications	3	[1]	3	0
				[3]	0	3
28	MIS3045	Object Oriented Programming	3	[1]	3	0
29	MIS3007	Information Systems Analysis and Design	3	[1]	3	0
30	MIS3006	Data Structures and Algorithms	3	[1]	3	0
31	MIS3008	Database Management System	3	[1]	3	0
				[3]	0	3
<b>Major knowledge</b>			<b>36</b>			
<i>Compulsory courses (21 TC)</i>			21		16	5
32	MIS3003	Safety and Security of Information Systems	3	[2]	2	1
33	MIS3004	IT Project Management	3	[1]	3	0
34	MIS3009	Data Warehousing and Data Mining	3	[1]	3	0
35	MIS3011	Enterprise Resource Planning	3	[2]	2	1
36	MIS3041	Python for Data Analysis	3	[1]	3	0
37	MIS3047	Business Process Management	3	[1]	3	0

#	Course code	Course name	Credit number	Type	Training credit number	
					DUE	Enterprise
38	MIS2012	Career Internship	3	[4]	0	3
	<i>Elective courses (Choose at least 15 credits)</i>		15			
39	MIS3030	Information System Analysis and Design - Practice	2	[4]	0	2
40	RMD3001	Research Methodology	2	[1]	2	0
41	MGT3003	Operation Management	3	[1]	3	0
42	HRM3001	Human Resource Management	3	[1]	3	0
43	COM3003	Customer Relationship Management	3	[1]	3	0
44	ACC2002	Management Accounting	3	[1]	3	0
45	MGT3020	Digital Transformation	3	[1]	3	0
46	MIS3034	Enterprise Resource Planning - Practice	2	[4]	0	2
47	ELC3006	Machine Learning	3	[1]	3	0
48	ELC3009	Web Data Mining	3	[1]	3	0
49	ELC3007	Data Visualization	3	[1]	3	0
50	ELC3008	Artificial Intelligence for Business	3	[1]	3	0
51	MIS3010	Web Programming	3	[1]	3	0
				[3]	0	3
52	MIS3048	Web Design	3	[1]	3	0
53	MIS3021	Software Testing	3	[2]	2	1
				[3]	0	3
54	MIS3012	Network Administrator	3	[1]	3	0
				[3]	0	3
55	MIS3032	Application Programming - Practice	2	[4]	0	2
56	MIS2010	Awareness Internship*	2	[4]	0	2

#	Course code	Course name	Credit number	Type	Training credit number	
					DUE	Enterprise
<b>D. Graduation Internship</b>						
<i>Student choose one of three types:</i>						
57	MIS4002	Graduation Thesis **	10	[4]	0	10
58	MIS4099	Graduation Project	10	[4]	0	10
<b>Total</b>			<b>134</b>			

\* *The Awareness Internship course is a compulsory course when implementing a training programme according to specific mechanism.*

\*\* *Students must study the Research Methods course when registering for the Graduate Thesis.*

### 2.8.3 Courses which have expert's teaching

#### a. Type [2] courses: (3 courses)

#	Course code	Course name	Credit number	Training credit number	
				DUE	Enterprise
<i>Compulsory course</i>					
1	MIS3003	Safety and Security of Information Systems	3	2	1
2	MIS3011	Enterprise Resource Planning	3	2	1
<i>Elective course</i>					
3	MIS3021	Software Testing	3	2	1

The lecturer is in charge of the module, making a script to organize teaching that combines practice at the enterprise with the content of theoretical learning at the school. Then coordinating with experts at the enterprise to organize effective classes.

**b. Type [3] courses: (05 courses)**

#	Course code	Course name	Credit number	Training credit number	
				DUE	Enterprise
<i>Compulsory course</i>					
1	MIS3002	Computer Networks and Data Communications	3	0	3
2	MIS3008	Database Management System	3	0	3
<i>Elective course</i>					
3	MIS3021	Software Testing	3	0	3
4	MIS3012	Network Administrator	3	0	3
5	MIS3010	Web Programming	3	0	3

Follow the roadmap of the training programme, register and self-study certificates at training institutions outside the University (attached appendix) to replace the corresponding courses.

At the beginning of each semester according to the study schedule, students must register with the University about their desire to study an external certificate to replace the course. Students must submit the appropriate certificate to be converted to the academic grade of the corresponding course at the end of the semester for the study point to be calculated.

**c. Type [4] courses: (06 courses)**

#	Course code	Course name	Credit number	Training credit number	
				DUE	Enterprise
<i>Compulsory course</i>					
1	MIS2010	Awareness Internship	2	0	2
2	MIS2012	Career Internship	3	0	3
3	MIS4099	Graduation Project / Or MIS4002 Graduation Thesis	10	0	10
<i>Elective course</i>					
4	MIS3030	Information System Analysis and Design - Practice	2	0	2
5	MIS3032	Application Programming - Practice	2	0	2

6	MIS3034	Enterprise Resource Planning – Practice	2	0	2
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*For the Awareness course, it is a compulsory course when the MIS programme implementing specific training. In this module, students visit enterprises, learn a new model or a new technology with the support and guidance of instructors in charge (instructors) and practical instructions of enterprises (mentors).*

*- For the Career Internship course: In this module, students work in enterprises under projects (groups or individuals) with the support and advisor of instructors in charge (instructors) and instructions. business practices (mentors).*

*- Graduation Internship: students will study in the final semester. In this semester, students can only register up to 2 courses, in order to have time to continuously work at the enterprise. The duration lasts 01 semester (semester 2 - year 4 according to the 4-year roadmap, term 1 - year 4 according to the 3.5-year roadmap). For the final graduation internship, Intern students spend 100% of their time at the enterprise.*

#### **2.8.4 Replaceable credits for the subjects**

Table 10. Certificates can be substituted for courses

#	Names of certificates (*)	Course
1	MCSA (Microsoft)	Network Administrator
2	CCNA (Cisco)	Computer Networks and Data Communications
3	Web Programming (PHP/Java/ASP.NET...)	Web Programming
4	Software Testing	Software Testing
5	- MCSA: SQL 2012/2014/2016/ Later version Database Administration - MCSA: SQL 2012/2014/2016/ Later version Database Development - MCSA: SQL Server 2012/2014/2016/ Later version - Oracle Database Certification (Oracle Database 11g, Oracle Database 12c or Later Version)	Database Management System

*(\*) Certificates are issued by accredited training institutions.*

**Danang, March 2021**

**Dean of Faculty of Statistics – Informatics**

**Dr. Le Dan**

