

**VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY  
INTERNATIONAL UNIVERSITY**

**School of Computer Science and Engineering**



**PROGRAM SPECIFICATION  
PROGRAM LEVEL  
BACHELOR OF ENGINEERING IN  
INFORMATION TECHNOLOGY**

**07/2022**

# PREFACE

The Bachelor programs of the School of Computer Science and Engineering (SCSE) were among the first programs at International University since its foundation in 2003. SCSE initially had an Information Technology major which consisted of two specializations namely Network Engineering and Computer Engineering. The second-year students could choose to specialize in their preferred major before they started their third year.

Every year, we collect feedback from stakeholders (graduates, alumni, employers, and faculty) about program objectives, learning outcomes, and curriculum in the questionnaire surveys. Based on the received feedback, the programs are reviewed and justified by the School's Academic Committee. The School's Dean and secretary will then report to OUA the changes in the curriculums if any. The following table lists the curriculum amendments from 2019.

- **Information Technology - Major Network Engineering**

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					Year 4. Semester 1
		PE019IU	Ho Chi Minh's Thoughts		Year 4. Semester 1, Year 3. Semester 2, Year 4. Semester 2
		IT116IU	C/C++ Programing in Unix		C/C++ Programing (rename) Year 1. Semester 2, Year 2. Semester 2
		IT045IU	Network Design and Evaluation	remove	
		IT156IU	Development and Operations		Elective belonging
		IT056IU	Software Project Management		IT056IU- IT Project Management (rename)
		IT112IU	Introduction to Distributed Computing	remove	
		IT122IU	Introduction to Wireless Network	remove	
		IT140IU	Fundamental Concepts of Data Security		Elective belonging
		IT076IU	Software Engineering		Elective belonging
		IT091IU	Computer Networks		Year 2. Semester 1, Year 3. Semester 1
		IT125IU	System & Network Administration	Change to Compel Course	Year 2. Semester 2, Year 3. Semester 2
		IT090IU	Object- Oriented Analysis and Design	remove	
		IT131IU	Theoretical Models in Computing		Year 3. Semester 1,

					Year 4. Semester 1
		IT139IU	Scalable and Distributed Computing		Year 3. Semester 1, Year 4. Semester 1
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	Intensive English 1	ENTP00	Intensive English 0	Year 1. Semester 1	
	Intensive English 2	ENTP01	Intensive English 1	Year 1. Semester 1	
		ENTP02	Intensive English 2	Year 1. Semester 1, Year 1. Semester 2	
		ENTP03	Intensive English 3	Year 1. Semester 1, Year 1. Semester 2	
		PE015IU	Philosophy Marx - Lenin	Year 2. Semester 1, Year 1. Semester 2, Year 1. Semester 1	
		PE016IU	Marxist – Leninist Political Economy	Year 2. Semester 2, Year 1. Semester 2, Year 1. Semester 1	
		PE017IU	Scientific Socialism	Year 3. Semester 1, Year 2. Semester 1	
		PE018IU	History of Vietnamese Communist Party	Year 3. Semester 2, Year 2. Semester 2, Year 4. Semester 1	
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		IT131IU	Theoretical Models in Computing	Year 3. Semester 1, Year 4. Semester 1	
		IT139IU	Scalable and Distributed Computing	Year 3. Semester 1, Year 4. Semester 1	
2021-2025	Subject ID	Adding	Credit	Details	
	IT132IU	Introduction to Data Mining	4	IT160IU- Data Mining (rename)	
	Subject ID	Remove the subjects	Changing the subjects	Varies according to English level	
	ENTP00	Intensive English 0	Intensive English 0	Year 1. Semester 1	

	ENTP01	Intensive English 1	Intensive English 1	Year 1. Semester 1
	ENTP02	Intensive English 2	Intensive English 2	Year 1. Semester 1, Year 1. Semester 2
	ENTP03	Intensive English 3		
Subject ID		Subject	Varies according to English level	
EN007IU& EN008IU		Academic English 1	Year 1. Semester 3, Year 1. Semester 2	
PE015IU		Philosophy Marx - Lenin	Year 1. Semester 3	
PH014IU		Physics 2	Year 2. Semester 1, Year 1. Semester 2	
PH015IU		Physics 3	Year 2. Semester 2	
PH016IU		Physics 3 Laboratory	Year 2. Semester 2	
MA023IU or MA024IU		Calculus 3 or Differential Equations	Year 3. Semester 1	
PH012IU		Physics 4	Year 3. Semester 1	
PE016IU		Marxist – Leninist Political Economy	Year 3. Semester 2	
PE017IU		Scientific Socialism	Year 4. Semester 1	
PE018IU		History of Vietnamese Communist Party	Year 4. Semester 2	
PE019IU		Ho Chi Minh's Thoughts	Year 5. Semester 1	
PT002IU		Physical Training 2	Year 2. Semester 2	
EN011IU		Writing AE2	Year 2. Semester 1, Year 2. Semester 2	
EN012IU		Speaking AE2	Year 2. Semester 1, Year 2. Semester 2	
CH011IU		Chemistry for Engineers	Year 2. Semester 1	
CH012IU		Chemistry Laboratory	Year 2. Semester 1	
PE008IU		Critical Thinking	Year 2. Semester 1	

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	PE013IU	Revolutionary Lines of Vietnamese Communist Party	PE017IU	Scientific Socialism		Year 3. Semester 1, Year 2. Semester 1, Year 4. Semester 1, Year 2. Semester 2
		PE018IU		History of Vietnamese Communist Party		Year 3. Semester 2, Year 4. Semester 2, Year 2. Semester 2
		PE019IU		Ho Chi Minh's Thoughts		Year 4. Semester 1, Year 4. Semester 2
		MA023IU	Calculus 3	remove		
		IT116IU	C/C++ Programing in Unix			C/C++ Programing (rename) Year 1. Semester 2, Year 2. Semester 2
		EE050IU	Introduction to Computer for Engineers	remove		
		IT070IU	Principles of EE2	remove		
		IT102IU	Principles of EE2 Laboratory	remove		
		IT068IU/ EE051IU	Principles of EE1			Year 2. Semester 1, Year 2. Semester 2, Year 1. Semester 2
		IT098IU/ EE052IU	Principles of EE1 Laboratory			Year 2. Semester 1, Year 2. Semester 2, Year 1. Semester 2
		MA024IU	Differential Equations	remove		
		IT075IU	Signals & Systems	remove		
		IT100IU	Signals & Systems Laboratory	remove		
		IT081IU	Digital Electronics	remove		
		IT123IU	Digital Electronics Laboratory	remove		

		IT091IU	Computer Networks		Year 3. Semester 1, Year 4. Semester 1
		IT128IU	Micro-processing Systems		Year 2. Semester 2, Year 3. Semester 2
		IT129IU	Micro-processing Systems Laboratory		Year 2. Semester 2, Year 3. Semester 2
		IT154IU	Linear Algebra		Year 2. Semester 1, Year 3. Semester 1
		IT131IU	Theoretical Models in Computing		Year 2. Semester 1, Year 3. Semester 1
		IT103IU	Digital Signal Processing	Change to Compel course	Year 2. Semester 2, Year 3. Semester 2
		IT115IU	Embedded Systems	Change to Compel course	Year 3. Semester 2, Year 4. Semester 2
		IT127IU	Embedded Systems Laboratory	Change to Compel course	Year 3. Semester 2, Year 4. Semester 2
		IT056IU	Software Project Management		IT056IU- IT Project Management (rename)
		IT110IU	Concepts in VLSI Design	Change to Compel course	Year 4. Semester 1
		IT126IU	Concepts in VLSI Design Laboratory	Change to Compel course	Year 4. Semester 1
			Free Elective		Elective belonging
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	ENTP03	Intensive English 3	Year 1. Semester 1, Year 1. Semester 2	
	PE015IU	Philosophy Marx - Lenin	Year 2. Semester 2, Year 2. Semester 1, Year 1. Semester 2	
	PE016IU	Marxist – Leninist Political Economy	Year 2. Semester 2, Year 3. Semester 1, Year 1. Semester 2	
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	PE018IU	History of Vietnamese Communist Party	Year 3. Semester 2, Year 4. Semester 2, Year 2. Semester 2	
	PE019IU	Ho Chi Minh's Thoughts	Year 4. Semester 1, Year 5. Semester 1, Year 4. Semester 2	
	IT116IU	C/C++ Programming in Unix	Year 1. Semester 2, Year 2. Semester 2	
	IT068IU/ EE051IU	Principles of EE1	Year 2. Semester 1, Year 2. Semester 2, Year 1. Semester 2	
	IT098IU/ EE052IU	Principles of EE1 Laboratory	Year 2. Semester 1, Year 2. Semester 2, Year 1. Semester 2	
	IT091IU	Computer Networks	Year 3. Semester 1, Year 4. Semester 1	
	IT128IU	Micro-processing Systems	Year 2. Semester 2, Year 3. Semester 2	
	IT129IU	Micro-processing Systems Laboratory	Year 2. Semester 2, Year 3. Semester 2	
	IT154IU	Linear Algebra	Year 2. Semester 1, Year 3. Semester 1	
	IT131IU	Theoretical Models in Computing	Year 2. Semester 1, Year 3. Semester 1	
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	PH014IU	Physics 2	Year 2. Semester 1, Year 1. Semester 2	
	PH015IU	Physics 3	Year 2. Semester 2, Year 2. Semester 1	
	PH016IU	Physics 3 Laboratory	Year 2. Semester 2, Year 2. Semester 1	
	PE016IU	Marxist-Leninist Political Economy	Year 3. Semester 2	
	MA026IU	Probability, Statistic & Random Process	Year 4. Semester 1	
	PE008IU	Critical Thinking	Year 4. Semester 2	
	PE017IU	Scientific Socialism	Year 4. Semester 1	
	PE018IU	History of Vietnamese Communist Party	Year 4. Semester 2	
	PE019IU	Ho Chi Minh's Thoughts	Year 5. Semester 1	
	CH011IU	Chemistry for Engineers	Year 2. Semester 1	
	CH012IU	Chemistry Laboratory	Year 2. Semester 1	
	EN011IU	Writing AE2	Year 2. Semester 2	
	EN012IU	Speaking AE2	Year 2. Semester 2	
	PH012IU	Physics 4	Year 4. Semester 2	

## **PROGRAM SPECIFICATION**

### **1. INTRODUCTION**

#### *a) Vision*

The School of Computer Science and Engineering is one of the schools of International University, Vietnam National University, Ho Chi Minh City. Therefore, the Vision of the School is under the Vision of the University (University will become a top research-oriented university of Vietnam, which has strong collaborations with worldwide prestigious universities, institutes, industries, local provinces and society).

#### *b) Mission*

- Offering high-quality graduate and undergraduate education in multi-disciplinary. All educational programs are accredited/assessed in accordance with regional and international standards (AUN, ASIIN or ABET).
- Offering excellent research including basic and applied research to meet the needs of industry, local provinces, society, and international standard.
- Taking the pioneer role in Vietnam by practicing management excellence, inspiring and assisting other VNU members in the advancement toward the development of Vietnam National University – HCMC as a whole.

#### *c) Objectives*

- Applying efficiently technical knowledge and practical skills to analyzing and solving problems of modern network, communication systems and computer engineering.
- Communicating and collaborating in teamwork environment effectively to deliver technical knowledge, ideas, proposals and solutions.
- Committing to technical capability in working environment and higher education programs by continuous self-improvement and lifelong learning.
- Seeking leadership roles and becoming proactive individuals with ethical and social responsibility in professional engineering societies.

#### *d) Program*

- *Language:* English

- *Types of Program:* The Information Technology program requires students to spend four and half years of study at IU and it offers students with a degree awarded by IU-VNU once completing the program.

#### *e) Qualification*

- The *Bachelor Degrees are awarded by the International University – Vietnam National University Ho Chi Minh City.*
- *Degree title:* “Bachelor of Engineering in Information Technology”

## **2. PROGRAM LEARNING OUTCOMES**

### *a) The program learning outcome*

ILO1 - an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;

ILO2 - an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;

ILO3 - an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;

ILO4 - an ability to analyze and interpret the results to improve processes;

ILO5 - an ability to function effectively as a member as well as a leader on technical teams.

ILO6 - an ability to conduct standard tests, measurements, and experiments

### *b) The program's learning outcomes are justified by their contents*

Our courses and program's learning outcomes are suitable with the Information Technology major based on the training profile, structure and defined content. The curriculum and learning outcomes of Information Technology is similar to some programs at other institutes such as University of Information Technology (UIT), University of Science – VNU-HCM.

## **3. THE PROGRAM OBJECTIVES**

The graduates from Bachelor of Engineering in IT program will have:

### 1. Industry knowledge and reasoning

(i) a solid basic knowledge of computers, computer systems, computer networks and IT applications, including theoretical and applied aspects

(ii) deep and broad specialized knowledge of computers, computer systems, computer networks and information technology applications. Possess analytical and problem-solving skills; design, develop and integrate information systems for computer-related engineering applications, computer network systems and computer network-based applications and systems. Ability to solve interdisciplinary technical, social, political and economic problems.

### 2. Personal and professional skills and qualities

(iii) knowledge of integration and entrepreneurship. Conscious of environmental protection, design and operate environmentally friendly systems.

### 3. Skills of teamwork and communication

(iv) necessary soft skills and problem solving. Ability to work in a team, leadership and management skills. Able to communicate and work professionally in English (at a proficient level).

(v) Having a clear awareness of professionalism, professional ethics and sense of responsibility towards self and society. Having good political qualities, living and working in compliance with the laws of the Vietnamese state.

4. Competency for professional practice

(vi) ability to self-study and research or participate in refresher courses to grasp new technologies,

(vii) have sufficient capacity for further study at home and abroad.

#### 4. JOB OPPORTUNITIES

The Information Technology major consists of two specializations namely Network Engineering and Computer Engineering. Bachelor of Networking Engineering can design and administer computer networks and information systems in enterprises, banks, domestic and foreign securities centers such as HSBC, BIDV, Viettel, etc. The students graduate from the Computer Engineering major are capable of participating in activities in companies specialized in the field of microprocessors, microcontrollers, IC design, embedded software, automatic control devices, and robots such as Intel, Renesas, Viettel, FPT, etc. Furthermore, the students can continue their higher education in the information technology field.

#### 5. PROGRAM OFFERING

- a) *Awarding body/institution:* International University HCMC
- b) *Teaching institution:* School of Computer Science and Engineering
- c) *Accreditation:*

*Institutional level: MOET (2016), AUN (2018)*

#### 6. TEACHING AND LEARNING APPROACH

The program consists of 5 modules

Module	Denomination	Type of subject
Module I	Basic training module	Compulsory
Module II	Training module common to the Information Technology degree	Compulsory
Module III	Specific training module for Network Engineering/Computer Engineering and electives	Compulsory
Module IV	Essential skill training	Compulsory
Module V	Module of supervised in-company internships and Thesis	Compulsory external internships

All the subjects in the modules are taught entirely in English except 5 courses (Philosophy Marx - Lenin, Marxist – Leninist Political Economy, History of Vietnamese Communist Party, and Ho Chi Minh Thought's, Scientific Socialism). Each student, regardless of their specialization, is required to take 8 credits in English to test the background. This guarantees

that the students receive a minimum of credits in a second language, in this case, English which is essential for exercising their study and profession. Students must pass the English proficiency test with scores of TOEFL iBT 61 or IELTS 5.5 to meet one of the general graduation requirements.

The curriculum also includes political subjects which are compulsory in Vietnam, such as Marxist-Leninist Philosophy, Marxist-Leninist Political Economy, Scientific Socialism, History of Vietnamese Communist Party and Ho Chi Minh's Thoughts.

The total workload per semester is about 18 credits on average. The maximum number of credits a student can take a semester is 24 credits, and the minimum credit is 12. According to IU's academic regulation, each credit is equivalent to 15 hours in-class study and 30 hours of self-study.

The exams are scheduled to avoid overlapping, distributing them along the exam period. Additionally, assessments based on tests, projects, oral presentations, etc. are used to test students' understanding during the course.

The school management board reviews and analyses the volume of students' work in the year to avoid peaks due to the practice and exam time of a large number of duplicated exam subjects.

Lectures for each course are scheduled weekly and student workload is distributed evenly over the semester. Each course's syllabus explicitly specifies the expected workload.

Teaching methods are diverse with many forms of promoting the positivity, initiative and creativity of learners including such as: group work, field trips, essays, projects, presentations.... to achieve the expected learning outcomes. Most of the modules use the group work method to help learners achieve the learning outcome, essays, projects and project-based teaching methods. Moreover, students are encouraged to join in student scientific research projects with their supervisors.

In the context of COVID-19, faculty members have quickly adapted and proficiently used online teaching methods and tools. Lectures were conducted via Zoom and Microsoft Teams. Lecturers also used Blackboard to provide students with class materials, quizzes and tests. Overall, lecturers can provide multimedia resources to support various online learning activities. Students can ask questions, self-check and self-evaluate their study progress, which trains learners' ability to self-study and lifelong learning.

## **7. STUDENT ASSESSMENT**

To assess student learning, different forms of assessment are specified in every course. They include midterm exams, final exams, labs, quizzes, home assignments and project presentations. The criteria to assess students' performance are clearly stated in the assessment plan of each course syllabus. At the beginning of the course, the lecturer informs the assessment criteria of the student's progress toward the course learning outcomes. Students and teaching staff can find everything related to the course specification and assessment criteria by looking in the Program specification that was published on the School/Department website as well as apparently shown in each syllabus in the first session of the new class.

The examination dates and times for each department and changes can be found on the Edusoft website. Therefore, the exam schedule is always up-to-date.

Students who have enrolled as attending or students who have enrolled as non-attending due to, for example, student exchange have the right to take part in examinations. The aim is to provide students who have been absent due to illness, military service, maternity or parental leave, or studies abroad the same rights upon their return as they had when they left. The rights shall remain in force until the end of the following semester.

## **8. PROGRAM STRUCTURE**

- a) Bachelor of Engineering in Information Technology – Network Engineering Major

## ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

**Triết học Mác-Lênin**  
(Philosophy Marx - Lenin)

### 1. Thông tin chung

Tên môn học (tiếng Việt):	Triết học Mác-Lênin
Tên môn học (tiếng Anh):	Philosophy Marx – Lenin
Mã số môn học:	PE015IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	3
Số tiết lý thuyết:	30 (trên lớp)
Số tiết thực hành:	15 (trên lớp)
Số tiết tự học:	90 (về nhà)
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

### 2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

2.1. Môn học trang bị cho sinh viên những nội dung cơ bản về thế giới quan, phương pháp luận triết học Mác - Lênin.

2.2. Giúp cho sinh viên vận dụng những tri thức về thế giới quan, phương pháp luận triết học triết học Mác - Lênin một cách sáng tạo trong hoạt động nhận thức và thực tiễn, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đang đặt ra.

### 3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về triết học Mác-Lênin

### 4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Triết học Mác - Lênin*, Nxb. Chính trị quốc gia, Hà Nội.
- Bộ Giáo dục và Đào tạo (2012), *Giáo trình Những Nguyên lý cơ bản của chủ nghĩa Mác - Lênin*, Nxb. Chính trị quốc gia, Hà Nội.
- Hội đồng Trung ương (2008), *Giáo trình Triết học Mác-Lênin*, Nxb. Chính trị quốc gia, Hà Nội.

### 5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
<b>5.1. Kiến thức</b>					
LO.1	TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI	LO. 1.1 - Khái lược được triết học, một số khái niệm cơ bản trong triết học LO. 1.2 - Nhận biết được sự đối lập giữa chủ nghĩa duy vật và chủ nghĩa duy tâm trong việc giải quyết vấn đề cơ bản của triết học LO. 1.3 - Nắm được chủ nghĩa duy vật biện chứng - hình thức phát triển cao nhất của chủ nghĩa duy vật biện chứng LO. 1.4 - Nắm rõ được sự ra đời, đối tượng, chức năng và vai trò của triết học Mác - Lênin	2.1	1.1.3	I3
LO.2	CHỦ NGHĨA DUY VẬT BIỆN CHỨNG	LO.2.1- Hiểu rõ vật chất theo quan điểm của chủ nghĩa duy vật biện chứng LO.2.2 - Hiểu rõ ý thức theo quan điểm của chủ nghĩa duy vật biện chứng LO.2.3 - Giải quyết được mối quan hệ giữa vật chất và ý thức theo quan điểm của chủ nghĩa duy vật biện chứng LO.2.4 - Hiểu được phép biện chứng và phép biện chứng duy vật LO.2.5 - Hiểu rõ được hai nguyên lý cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận của từng nguyên lý LO.2.6 - Hiểu rõ được các cấp phạm trù cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận từng cấp phạm trù LO.2.7 - Hiểu rõ được các quy luật cơ bản của cơ bản của phép biện chứng duy vật và rút ra ý nghĩa phương pháp luận từng quy luật LO.2.8 - Hiểu rõ được thực tiễn, nhận thức, vai trò của thực tiễn đối với nhận thức và chân lý	2.1 2.1 2.1 2.1 2.1 2.2 2.1 2.2 2.1 2.2	1.1.3	T4

<b>5.3. Thái độ</b>						
LO.5	THẾ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.5.1. Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng, nhân văn của CN Mác - Lê-nin LO.5.2. Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng LO.5.3. Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận dụng nó trong cuộc sống.	2.1 2.2	3.1		U3
LO.3	CHỦ NGHĨA DUY VẬT LỊCH SỬ	LO.3.1 - Nắm được vai trò của sản xuất vật chất và phương thức sản xuất đối với sự tồn tại và phát triển xã hội LO.3.2 - Hiểu rõ được mối quan hệ biện chứng giữa lực lượng sản xuất và quan hệ sản xuất LO.3.3 - Hiểu rõ được mối quan hệ biện chứng giữa CSHT và KTTT; sự phát triển tự nhiên của các hình thái KT-XH LO.3.4 - Hiểu rõ được giai cấp, đấu tranh giai cấp; dân tộc và mối quan hệ giữa giai cấp, dân tộc và nhân loại LO.3.5 - Hiểu rõ được nhà nước và mạng xã hội LO.3.6 - Hiểu rõ được mối quan hệ biện chứng giữa tồn tại xã hội và ý thức xã hội LO.3.7 - Hiểu rõ được con người bản chất con người; hiện tượng tha hóa và giải phóng con người mối quan hệ giữa cá nhân và xã hội, vai trò của quần chúng nhân dân	2.1 2.2	1.1.3	T4	
<b>5.2. Kỹ năng</b>						
LO.4	THẾ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.4.1. Có kỹ năng khái quát hóa để rút ra <i>Tùy khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống LO.4.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn LO.4.3. Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc	2.1 2.2	2.1.1 2.3.1  2.4.4 2.5 3.1.5		U4

## 6. Kế hoạch giảng dạy theo buổi học (Course Plan):

TT (Tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (1 tiết)	<b>Giới thiệu về môn học</b>	LO.1, LO.4;	<p><b>Dạy:</b></p> <ul style="list-style-type: none"> <li>- Giới thiệu đê cương môn học</li> <li>- Giới thiệu nội dung đê tài thuyết trình nhóm GHW)</li> </ul> <p><b>Học ở lớp:</b></p> <ul style="list-style-type: none"> <li>- Chia nhóm (5 sv/nhóm)</li> <li>- Giới thiệu nhóm học tập</li> </ul> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>-Chọn đê tài thuyết trình của nhóm (GHW)</li> </ul> <p>Đọc trước tài liệu chương 1.</p>	
2 (15 tiết)	<b>Chương 1 TRIẾT HỌC VÀ VAI TRÒ CỦA TRIẾT HỌC TRONG ĐỜI SỐNG XÃ HỘI</b>	LO.1; LO.4 LO.5	<p><b>Dạy:</b></p> <p><b>I. TRIẾT HỌC VÀ VÂN ĐỀ CƠ BẢN CỦA TRIẾT HỌC</b></p> <ol style="list-style-type: none"> <li>1. Khái lược về triết học</li> <li>2. Ván đề cơ bản của triết học</li> <li>3. Biện chứng và siêu hình</li> </ol> <p><b>II. TRIẾT HỌC MÁC - LÊNIN VÀ VAI TRÒ CỦA TRIẾT HỌC MÁC - LÊNIN TRONG ĐỜI SỐNG XÃ HỘI</b></p> <ol style="list-style-type: none"> <li>1. Sự ra đời và phát triển của triết học Mác - Lenin</li> <li>2. Đổi tượng và chức năng của triết học Mác - Lenin</li> <li>3. Vai trò của triết học Mác - Lenin trong đời sống xã hội và trong sự nghiệp đổi mới ở Việt Nam hiện nay</li> </ol> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Phác thảo nội dung thuyết trình nhóm GHW</li> </ul> <p>Đọc trước tài liệu chương 2.</p>	Thi giữa kỳ (Quiz)
3 (15 tiết)	<b>Chương 2 CHỦ NGHĨA DUY VẬT BIỆN CHỨNG</b>	LO.2 LO.4 LO.5	<p><b>Dạy:</b></p> <p><b>I. VẬT CHẤT VÀ Ý THỨC</b></p> <ol style="list-style-type: none"> <li>1. Vật chất và các hình thức tồn tại của vật chất</li> <li>2. Nguồn gốc, bản chất và kết cấu của ý thức</li> <li>3. Mối quan hệ giữa vật chất và ý thức</li> </ol> <p><b>II. PHÉP BIỆN CHỨNG DUY VẬT</b></p> <ol style="list-style-type: none"> <li>1. Hai loại hình biện chứng và phép biện chứng duy vật</li> <li>Nội dung của phép biện chứng duy vật</li> </ol> <p><b>III. LÝ LUẬN NHẬN THỨC</b></p> <ol style="list-style-type: none"> <li>1. Các nguyên tắc của lý luận nhận thức duy vật biện chứng</li> <li>2. Nguồn gốc, bản chất của nhận thức</li> <li>3. Thực tiễn và vai trò của thực tiễn đối với nhận thức</li> <li>4. Các giai đoạn cơ bản của quá trình nhận thức</li> </ol> <p>Chân lý</p> <p><b>Học ở Lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <p>Đọc trước tài liệu chương 3</p>	Thi giữa kỳ (Quiz)  Thi cuối kỳ (FEX)
4 (14 tiết)	<b>Chương 3 CHỦ NGHĨA DUY</b>	L0.3 L0.4 L0.5	<p><b>Dạy:</b></p> <p><b>I. HỌC THUYẾT HÌNH THÁI KINH TẾ - XÃ HỘI</b></p> <ol style="list-style-type: none"> <li>1. Sản xuất vật chất là cơ sở của sự tồn tại và phát triển xã hội</li> </ol>	Thuyết trình nhóm

	VẬT LỊCH SỬ	<p>2. Biện chứng giữa lực lượng sản xuất và quan hệ sản xuất</p> <p>3. Biện chứng giữa cơ sở hạ tầng và kiến trúc thương tầng của xã hội</p> <p>4. Sự phát triển các hình thái kinh tế - xã hội là một quá trình lịch sử - tự nhiên</p> <p><b>II. GIAI CẤP VÀ DÂN TỘC 160</b></p> <p>1. Vấn đề giai cấp và đấu tranh giai cấp</p> <p>2. Dân tộc</p> <p>3. Mối quan hệ giai cấp - dân tộc - nhân loại</p> <p><b>III. NHÀ NƯỚC VÀ CÁCH MẠNG XÃ HỘI</b></p> <p>1. Nhà nước</p> <p>2. Cách mạng xã hội</p> <p><b>IV. Ý THỨC XÃ HỘI</b></p> <p>1. Khái niệm tồn tại xã hội và các yếu tố cơ bản của tồn tại xã hội</p> <p>2. Ý thức xã hội và kết cấu của ý thức xã hội</p> <p><b>V. TRIẾT HỌC VỀ CON NGƯỜI</b></p> <p>1. Khái niệm con người và bản chất con người</p> <p>2. Hiện tượng tha hóa con người và vấn đề giải phóng con người</p> <p>3. Quan hệ cá nhân và xã hội; vai trò của quần chúng nhân dân và lãnh tụ trong lịch sử</p> <p>Vấn đề con người trong sự nghiệp cách mạng ở Việt Nam</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b> Hoàn thiện bài thuyết trình</p>	(GHW)	Thi cuối kỳ (FEX)
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## 7. Đánh giá môn học

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.2 LO.3 LO.4 LO.5
2	Quiz	Bài thi giữa kỳ	Thi theo đề thi chung	20%	Tự luận đề mở	LO.1 LO.2;
3	Die	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. sv có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.4 LO.5
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.2; LO.3; LO.4;
			<b>Tổng cộng</b>	<b>100%</b>		

## 8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	Nhận biết được sự đối lập giữa chủ nghĩa duy vật và chủ nghĩa duy tâm trong việc giải quyết vấn đề cơ bản của triết học; vai trò của triết học Mác – Lênin	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.4	Nắm rõ nội dung: Vật chất, ý thức và mối quan hệ giữa chúng; các nguyên lý, các quy luật và các phạm trù cơ bản của phép biện chứng duy vật	Chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của GV
LO.3 LO.4	Nhận biết và nắm được nội dung của chủ nghĩa duy vật lịch sử	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV

## 9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- Quy định về Bài thuyết trình nhóm GHW

Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2 hoặc trực tiếp nộp cho GV buổi 1.

Tuần 4 (buổi thứ 4) thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.

Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV

- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế. Có đầy đủ điểm kiểm tra, điểm thi kết thúc học phần & nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

**KT. TRƯỞNG KHOA  
PHÓ TRƯỞNG KHOA**

(Đã ký)

TS. Nguyễn Đình Quốc Cường

## ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

### Kinh tế chính trị Mác-Lênin

(Marxist - Leninist Political Economy)

#### 1. Thông tin chung

Tên môn học (tiếng Việt):	Kinh tế chính trị Mác-Lênin
Tên môn học (tiếng Anh):	Marxist - Leninist Political Economy
Mã số môn học:	PE016IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	02
Số tiết lý thuyết:	20 (trên lớp)
Số tiết thực hành:	10 (trên lớp)
Số tiết tự học:	60 (về nhà)
Môn học song hành:	1. Triết học Mác - Lê nin
Giảng viên phụ trách:	Khoa Chính trị - Hành chính, ĐHQG-HCM

#### 2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

2.1. Một là, trang bị cho sinh viên những kiến thức cơ bản, cốt lõi của Kinh tế chính trị Mác - Lê nin trong bối cảnh phát triển kinh tế của đất nước và thế giới ngày nay. Đảm bảo tính cơ bản, hệ thống, khoa học, cập nhật tri thức mới, gắn với thực tiễn, tính sáng tạo, kỹ năng, tư duy, phẩm chất người học, tính liên thông khắc phục trùng lặp, tăng cường tích hợp và giảm tải, lược bỏ những nội dung không còn phù hợp hoặc những nội dung mang tính kinh viện đối với sinh viên các trường Cao đẳng, Đại học không chuyên lý luận.

2.2. Hai là, trên cơ sở đó hình thành tư duy, kỹ năng phân tích, đánh giá và nhận diện bản chất của các quan hệ lợi ích kinh tế trong phát triển kinh tế - xã hội của đất nước góp phần giúp sinh viên xây dựng trách nhiệm xã hội phù hợp trong vị trí việc làm và cuộc sống sau khi ra trường.

2.3. Ba là, góp phần xây dựng lập trường, ý thức hệ tư tưởng Mác - Lê nin đối với sinh viên.

#### 3. Mô tả môn học (Course Outlines)

Nội dung chương trình gồm 6 chương: Trong đó chương 1 bàn về đối tượng, phương pháp nghiên cứu và chức năng của Kinh tế chính trị Mác - Lê nin. Từ chương 2 đến chương 6 trình bày nội dung cốt lõi của Kinh tế chính trị Mác - Lê nin theo mục tiêu của môn học. Cụ thể các vấn đề như: Hàng hóa, thị trường và vai trò của các chủ thể trong nền kinh tế thị trường; Sản xuất giá trị thặng dư trong nền kinh tế thị trường; Cảnh tranh và độc quyền trong nền kinh tế thị trường; Kinh tế thị trường định hướng xã hội chủ nghĩa và các quan hệ lợi ích kinh tế ở Việt Nam; Công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế ở Việt Nam.

#### 4. Tài liệu phục vụ học tập:

- Tài liệu bắt buộc: Giáo trình kinh tế chính trị Mác - Lê nin dành cho bậc đại học không chuyên kinh tế chính trị.
- Tài liệu đọc thêm:
  - + Robert, JR và Robert F. Hebert (2003), Lịch sử các học thuyết kinh tế, Bản tiếng Việt, Nxb Thông kê.
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#### 5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
<b>5.1. Kiến thức</b>					
LO.1	ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC - LÊNIN	LO. 1.1 -Năm được sự hình thành và phát triển của Kinh tế chính trị Mác – Lê nin	2.1		I3
		LO. 1.2 - Xác định được đối tượng nghiên cứu của kinh tế chính trị Mác - Lê nin.			
		LO. 1.3 - Hiểu rõ được phương pháp nghiên cứu của kinh tế chính trị Mác - Lê nin			
		LO. 1.4 - Hiểu rõ các chức năng của môn học kinh tế chính trị Mác - Lê nin.			
LO.2	HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ	LO.2.1- Hiểu rõ sản xuất hàng hóa và điều kiện ra đời của sản xuất hàng hóa	2.1		T4

	CỦA CÁC CHỦ THÈM THAM GIA THỊ TRƯỜNG.	LO.2.2 - Hiểu rõ hàng hóa, hai thuộc tính của hàng hóa và mối quan hệ giữa hai thuộc tính LO.2.3 - Hiểu rõ mối quan hệ giữa tính hai mặt của lao động sản xuất hàng hóa với hai thuộc tính của hàng hóa LO.2.4 - Hiểu rõ mặt chất và lượng của giá trị hàng hóa và các nhân tố ảnh hưởng đến lượng giá trị hàng hóa LO.2.5 - Hiểu rõ được nguồn gốc, bản chất và chức năng của tiền tệ. LO.2.6 - Hiểu rõ về thị trường, vai trò của thị trường, cơ chế thị trường và nền kinh tế thị trường. LO.2.7 - Hiểu rõ được một số quy luật kinh tế chủ yếu của kinh tế thị trường. LO.2.8 - Hiểu rõ vai trò của các chủ thể tham gia thị trường.		
LO.3	GIÁ TRỊ THẶNG DỰ TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.3.1 - Hiểu rõ được tư bản là gì, công thức chung của tư bản và mâu thuẫn LO.3.2 - Hiểu rõ được hàng hóa sức lao động là gì, tại sao nghiên cứu hàng hóa LO.3.3 - Hiểu rõ được giá trị thặng dư là gì. Xác định được có mấy phuong LO.3.4 - Hiểu rõ được bản chất của tích lũy tư bản, nhưng nhân tố làm tăng quy LO.3.5 - Hiểu rõ được các khái niệm: chi phí sản xuất, lợi nhuận, tỷ suất lợi nhuận, lợi nhuận bình quân, lợi nhuận thương nghiệp, các nhân tố ảnh hưởng đến tỷ suất lợi nhuận LO.3.6 - Hiểu rõ được lợi tức là gì. LO.3.7 - Hiểu rõ được địa tô tư bản chủ nghĩa. Có mấy loại địa tô tư bản chủ nghĩa và giá cả ruộng đất.	2.1 2.1 2.1 2.3 2.1 2.1 2.1 2.3	T4
LO.4	CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NỀN KINH TẾ THỊ TRƯỜNG	LO.4.1 - Hiểu rõ được quan hệ giữa cạnh tranh và độc quyền trong nền kinh tế thị trường. LO.4.2 - Hiểu rõ được nguyên nhân hình thành độc quyền trong nền kinh tế thị trường. LO.4.3 - Hiểu rõ được những đặc điểm kinh tế cơ bản của độc quyền trong chủ nghĩa tư bản theo quan điểm của V.I. LO.4.4 - Hiểu rõ được nguyên nhân hình thành và phát triển của chủ nghĩa tư bản độc quyền nhà nước.	2.1 2.1 2.1 2.1	

		LO.4.5 - Hiểu rõ được bản chất của chủ nghĩa tư bản độc quyền nhà nước và những biểu hiện chủ yếu của độc quyền nhà nước trong chủ nghĩa tư bản.	2.3 2.1		
		LO.4.6 - Năm được vai trò lịch sử của chủ nghĩa tư bản.			
LO.5	KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM	LO.5.1 - Hiểu rõ được khái niệm kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1		
		LO.5.2 - Hiểu rõ được tính tất yếu khách quan của việc phát triển kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1		
		LO.5.3 - Năm được những đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam.	2.1		
		LO.5.4 - Hiểu rõ thể chế kinh tế thị trường định hướng xã hội chủ nghĩa là gì và sự cần thiết phải hoàn thiện nó.	2.1	T4	
		LO.5.5 - Năm được những nội dung cơ bản của hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam	2.1		
		LO.5.6 - Hiểu rõ được khái niệm lợi ích kinh tế và quan hệ lợi ích kinh tế	2.2		
		LO.5.7 - Hiểu rõ được vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích	2.1		
LO.6	CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP KINH TẾ QUỐC TẾ CỦA VIỆT NAM	LO.6.1 - Hiểu rõ được cách mạng công nghiệp là gì, khái quát được các cuộc cách mạng đã diễn ra trong lịch sử.	2.1		
		LO.6.2 - Hiểu rõ vai trò của cách mạng công nghiệp đối với sự phát triển	2.1		
		LO.6.3 - Hiểu được công nghiệp hóa là gì và các mô hình công nghiệp hóa tiêu biểu trên thế giới.	2.1		
		LO.6.4 - Hiểu rõ tính tất yếu khách quan của công nghiệp hóa, hiện đại hóa ở Việt Nam.	2.1	T4	
		LO.6.5 - Năm được những nội dung của công nghiệp hóa, hiện đại hóa ở Việt Nam.	2.1		
		LO.6.6 - Năm được công nghiệp hóa, hiện đại hóa ở Việt Nam trong bối cảnh của cuộc cách mạng công nghiệp lần thứ 4.	2.3		
		LO.6.7 - Hiểu rõ được hội nhập kinh tế quốc tế là gì. Vì sao hội nhập kinh tế quốc tế là sự cần thiết khách quan.	2.1		

		LO.6.8 - Nắm được những nội dung và tác động tích cực và tiêu cực của hội nhập kinh tế quốc tế.	2.3		
		LO.6.9 - Nắm được phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế trong phát triển của Việt Nam	2.3		

### 5.2. Kỹ năng

L0.7	THẾ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	LO.7.1. Có kỹ năng khái quát hóa để rút ra <i>Tùy khóa tri thức</i> đối với mỗi nội dung và tư duy có hệ thống	2.1 2.2 2.4	U4
		LO.7.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn		
		LO.7.3. Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc		

### 5.3. Thái độ

LO.8	THẾ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.8.1. Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng, nhân văn của CN Mác - Lê-nin	2.1 2.2 2.3	U3
		LO.8.2. Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng		
		LO.8.3. Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận dụng nó trong đời sống.		

## 6. Kế hoạch giảng dạy theo buổi học (Course Plan):

TT	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (1 tiết)	Giới thiệu về môn học	LO.1, LO.7;	<p><b>Dạy:</b></p> <ul style="list-style-type: none"> <li>- Tự giới thiệu về giảng viên</li> <li>- Giới thiệu đề cương và tài liệu môn học</li> <li>- Hướng dẫn cách thức dạy và học và cách đánh giá.</li> <li>- Giới thiệu nội dung đề tài thuyết trình nhóm GHW)</li> </ul> <p><b>Học ở lớp:</b></p> <ul style="list-style-type: none"> <li>- Chia nhóm (5 sv/nhóm)</li> <li>- Giới thiệu nhóm học tập</li> </ul> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Chọn đề tài thuyết trình của nhóm (GHW)</li> <li>- Đọc trước tài liệu chương 1.</li> </ul>	

2 (2 tiết)	<b>Chương I</b> <b>ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC - LÊNIN</b>	<b>Day:</b> I. SỰ HÌNH THÀNH VÀ PHÁT TRIỂN CỦA KTCT MÁC - LENIN 1. Giai đoạn từ cổ đại đến thế kỷ 18 2. Giai đoạn từ sau thế kỷ 18 đến nay II. ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU CỦA KINH TẾ CHÍNH TRỊ MÁC - LÊNIN. 1. Đối tượng nghiên cứu 2. Phương pháp nghiên cứu 3. Mục đích nghiên cứu III. CHỨC NĂNG CỦA KINH TẾ CHÍNH TRỊ MÁC - LÊNIN. 1. Chức năng nhận thức 2. Chức năng thực tiễn 3. Chức năng tư tưởng 4. Chức năng phương pháp luận <b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp. <b>Học ngoài lớp:</b> - Phác thảo nội dung thuyết trình nhóm GHW - Đọc trước tài liệu chương 2.		Thi giữa kỳ (Quiz)
3 (6 tiết)	<b>Chương 2</b> <b>HÀNG HÓA, THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THỀ THAM GIA THỊ TRƯỜNG.</b>	<b>Day:</b> I. LÝ LUẬN CỦA CÁC MÁC VỀ SẢN XUẤT HÀNG HÓA VÀ HÀNG HÓA. 1. Sản xuất hàng hóa - Khái niệm sản xuất hàng hóa - Điều kiện ra đời của sản xuất hàng hóa. 2. Hàng hóa - Khái niệm hàng hóa - Hai thuộc tính của hàng hóa - Lượng giá trị và các nhân tố ảnh hưởng đến lượng giá trị của hàng hóa - Tính hai mặt của lao động sản xuất hàng hóa. 3. Tiền - Nguồn gốc và bản chất của tiền - Chức năng của tiền 4. Dịch vụ và một số hàng hóa đặc biệt. II. THỊ TRƯỜNG VÀ VAI TRÒ CỦA CÁC CHỦ THÈM THAM GIA THỊ TRƯỜNG. 1. Thị trường - Khái niệm về thị trường - Vai trò của thị trường. - Cơ chế thị trường - Nền kinh tế thị trường. 2. Vai trò của các chủ thể tham gia thị trường. - Người sản xuất. - Người tiêu dùng. - Các chủ thể trung gian trong thị trường. - Nhà nước. <b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp <b>Học ngoài lớp:</b> Đọc trước tài liệu chương 3.		Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)

4 (6 tiết)	<b>Chương 3</b> <b>GIÁ TRỊ</b> <b>THẶNG DƯ</b> <b>TRONG</b> <b>NỀN KINH</b> <b>TẾ THỊ</b> <b>TRƯỜNG</b>	LO.3 LO.7 LO.8	<p><b>Dạy:</b></p> <p>I.LÝ LUẬN CỦA CÁC MÁC VỀ GIÁ TRỊ THẶNG DƯ</p> <p>1.Nguồn gốc của giá trị thặng dư 2.Bản chất của giá trị thặng dư 3.Các phương pháp sản xuất giá trị thặng dư trong nền kinh tế thị trường tư bản chủ nghĩa.</p> <p>II.TÍCH LŨY TỰ BẢN</p> <p>-Bản chất của tích lũy -Những nhân tố góp phần làm tăng quy mô tích lũy -Một số hệ quả của tích lũy tư bản</p> <p>III.CÁC HÌNH THỨC BIỂU HIỆN GIÁ TRỊ THẶNG DƯ TRONG NỀN KINH TẾ THỊ TRƯỜNG</p> <p>1.Lợi nhuận 2.Lợi tức 3.Địa tô tư bản chủ nghĩa</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp <b>Học ngoài lớp:</b> Hoàn thiện bài thuyết trình Đọc trước tài liệu chương 4</p>	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
5 (5 tiết)	<b>Churomg 4</b> <b>CẠNH</b> <b>TRANH VÀ</b> <b>ĐỘC QUYỀN</b> <b>TRONG NỀN</b> <b>KINH TẾ THỊ</b> <b>TRƯỜNG</b>	LO.4 LO.7 LO.8	<p><b>Dạy:</b></p> <p>I. QUAN HỆ GIỮA CẠNH TRANH VÀ ĐỘC QUYỀN TRONG NN KINH TẾ THỊ TRƯỜNG.</p> <p>II. ĐỘC QUYỀN VÀ ĐỘC QUYỀN NHÀ NƯỚC TRONG NỀN KINH TẾ THỊ TRƯỜNG.</p> <p>1.Lý luận của V.I. Lê nin về độc quyền trong nền kinh tế thị trường.</p> <ul style="list-style-type: none"> <li>- Nguyên nhân hình thành và tác động của độc quyền.</li> <li>- Những đặc điểm kinh tế cơ bản của độc quyền trong chủ nghĩa tư bản</li> </ul> <p>2.Lý luận của V.I. Lê nin về độc quyền nhà nước trong chủ nghĩa tư bản.</p> <ul style="list-style-type: none"> <li>- Nguyên nhân ra đời và phát triển của độc quyền nhà nước trong chủ nghĩa tư bản.</li> <li>- Bản chất của độc quyền nhà nước trong chủ nghĩa tư bản.</li> <li>- Những biểu hiện chủ yếu của độc quyền nhà nước trong chủ nghĩa tư bản.</li> <li>- Vai trò lịch sử của chủ nghĩa tư bản.</li> </ul> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp <b>Học ngoài lớp:</b> Đọc trước tài liệu chương 5</p>	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)
6 (5 tiết)	<b>Churong 5</b> <b>KINH TẾ THỊ</b> <b>TRƯỜNG</b> <b>ĐỊNH HƯỚNG</b> <b>XÃ HỘI CHỦ</b> <b>NGHĨA VÀ</b> <b>CÁC QUAN</b> <b>HỆ LỢI ÍCH</b> <b>KINH TẾ Ở</b> <b>VIỆT NAM</b>	LO.5  LO.7  LO.8	<p><b>Dạy:</b></p> <p>I. KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM</p> <ol style="list-style-type: none"> <li>1. Khái niệm kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam</li> <li>2. Tính tất yếu khách quan của việc phát triển kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam.</li> <li>3. Đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam.</li> </ol>	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)

<p><b>Chương 5</b></p> <p><b>KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA VÀ CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM</b></p> <p>6 (5 tiết)</p>	<p>II. HOÀN THIỆN THỂ CHẾ KINH TẾ THỊ TRƯỜNG ĐỊNH HƯỚNG XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM.</p> <p>1.Sự cần thiết phải hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam</p> <p>2.Hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam một số khía cạnh chủ yếu.</p> <p>III. CÁC QUAN HỆ LỢI ÍCH KINH TẾ Ở VIỆT NAM</p> <p>Lợi ích kinh tế và quan hệ lợi ích kinh tế.</p> <p>1.Vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích</p> <p>Học ở lớp: Thảo luận và phát biểu trên lớp</p> <p>Học ngoài lớp: Hoàn thiện bài thuyết trình</p>	<p>LO.5</p> <p>LO.7</p> <p>LO.8</p>	<p>Thuyết trình nhóm (GHW)</p> <p>Thi cuối kỳ (FEX)</p>
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## 7. Đánh giá môn học

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.4 LO 5 LO6 LO.7 LO.8
2	Quiz	Bài thi giữa kỳ	Thi theo đề thi chung	20%	Tự luận đề mở	LO.2 LO.3
3	DIC	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. sv có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.7 LO.8
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.2 LO.3 LO.4 LO.5 LO.6 LO.7 LO.8
<b>Tổng cộng</b>				<b>100%</b>		

## 8. Tiêu chí đánh giá chuẩn đầu ra môn học

<b>TT</b>	<b>Chuẩn đầu ra</b>	<b>Nội dung</b>	<b>Phương pháp</b>	<b>Tiêu chí đánh giá</b>
LO.1	Nhận biết được vị trí của Kinh tế chính trị Mác - Lê nin trong hệ thống lịch sử tư tưởng kinh tế và nắm được đối tượng, phương pháp và chức năng của kinh tế chính trị Mác - Lê nin.	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.7	Nắm rõ nội dung: sản xuất hàng hóa, điều kiện ra đời của sản xuất hàng hóa, khái niệm hàng hóa và hai thuộc tính của hàng hóa, chất và lượng của giá trị hàng hóa, mối quan hệ giữa tính hai mặt của lao động sản xuất hàng hóa với hai thuộc tính của hàng hóa, các nhân tố ảnh hưởng đến lượng giá trị của hàng hóa, nguồn gốc ra đời, bản chất và chức năng của tiền. Thị trường, cơ chế thị trường, nền kinh tế thị trường và vai trò các chủ thể tham gia thị trường	Chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của GV
LO.3 LO.7	Hiểu rõ và nắm được những nội dung: tư bản là gì? Công thức chung và mâu thuẫn công thức chung của tư bản. Hàng hóa sức lao động và tính chất đặc biệt của giá trị sử dụng hàng hóa sức lao động. Giá trị thặng dư và hai phương pháp sản xuất giá trị thặng dư. Tích lũy tư bản và những nhân tố làm tăng quy mô tích lũy. Các khái niệm về chi phí sản xuất, lợi nhuận, lợi tức và địa tô tư bản chủ nghĩa	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV
LO.4 LO.7	Hiểu rõ và nắm được những nội dung: quan hệ giữa cạnh tranh và độc quyền trong nền kinh tế thị trường. Tổ chức độc quyền là gì? Nguyên nhân hình thành các tổ chức độc quyền. Những đặc điểm kinh tế cơ bản của độc quyền theo quan điểm của V.I. Lê nin. Lý luận về độc quyền nhà nước trong chủ nghĩa tư bản. Vai trò lịch sử của chủ nghĩa tư bản.	Chương 4	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV

LO.5 LO.7	<p>Hiểu rõ và nắm được những nội dung: kinh tế thị trường định hướng xã hội chủ nghĩa ở Việt Nam, những đặc trưng của kinh tế thị trường định hướng xã hội chủ nghĩa. Thể chế kinh tế thị trường định hướng xã hội chủ nghĩa và sự cần thiết phải hoàn thiện thể chế kinh tế thị trường định hướng xã hội chủ nghĩa. Lợi ích kinh tế và quan hệ lợi ích kinh tế. Vai trò của nhà nước trong đảm bảo hài hòa các quan hệ lợi ích.</p>	Chương 5	<p>Thảo luận tại lớp (Discussion in class)</p> <p>Thi cuối kỳ (FEX)</p>	<p>Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp</p> <p>Ngân hàng đề thi của GV</p>
LO.6 LO.7	<p>Hiểu rõ và nắm được những nội dung: cách mạng công nghiệp là gì? Vai trò của cách mạng công nghiệp đối với sự phát triển. Công nghiệp hóa là gì? Các mô hình công nghiệp hóa tiêu biểu trên thế giới. Công nghiệp hóa, hiện đại hóa ở Việt Nam là gì. Tính tất yếu khách quan phải công nghiệp hóa, hiện đại hóa ở Việt Nam. Công nghiệp hóa, hiện đại hóa ở Việt Nam trong bối cảnh cuộc cách mạng công nghiệp lần thứ 4. Hội nhập kinh tế quốc tế là gì, sự cần thiết khách quan phải hội nhập kinh tế quốc tế. Tác động của hội nhập kinh tế quốc tế của Việt Nam. Phương hướng nâng cao hiệu quả hội nhập kinh tế quốc tế.</p>	Chương 6	<p>Thảo luận tại lớp (Discussion in class)</p> <p>Thi cuối kỳ (FEX)</p>	<p>Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp</p> <p>Ngân hàng đề thi của GV</p>

## 9. Một số lưu ý khác

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với giảng viên qua email: lethong0804@gmail.com
- Quy định về Bài thuyết trình nhóm GHW
- Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2 hoặc trực tiếp nộp cho GV buổi 1.
- Tuần 4 (buổi thứ 4) thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.
- Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV
- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế. Có đầy đủ điểm kiểm tra, điểm thi kết thúc học phần & nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

KT. TRƯỞNG KHOA  
PHÓ TRƯỞNG KHOA

(Đã kí)  
TS. Nguyễn Đình Quốc Cường

**ĐỀ CƯƠNG CHI TIẾT MÔN HỌC**  
**Chủ nghĩa xã hội khoa học**  
(Scientific socialism)

**1. Thông tin chung**

Tên môn học (tiếng Việt):	Chủ nghĩa xã hội khoa học
Tên môn học (tiếng Anh):	Scientific socialism
Mã số môn học:	PE017IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	2
Số tiết lý thuyết:	30 (trên lớp)
Số tiết thực hành:	
Số tiết tự học:	60 (về nhà)
Môn học trước:	1. Kinh tế chính trị Mác - Lê nin, 2. Triết học Mác - Lê nin
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

**2. Mục đích/mục tiêu môn học** (Course Purposes/Aims)

- 2.1. Môn học trang bị cho sinh viên những nội dung cơ bản của chủ nghĩa xã hội khoa học (một trong ba bộ phận cấu thành chủ nghĩa Mác - Lê nin).
- 2.2. Giúp cho sinh viên vận dụng những tri thức cơ bản của chủ nghĩa xã hội khoa học một cách sáng tạo trong hoạt động nhận thức và thực tiễn, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đang đặt ra.

**3. Mô tả môn học** (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về chủ nghĩa xã hội khoa học

**4. Tài liệu phục vụ học tập:**

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Chủ nghĩa xã hội khoa học*, Nxb. Chính trị quốc gia, Hà Nội.
- Bộ Giáo dục và Đào tạo (2012), *Giáo trình Những Nguyên lý cơ bản của chủ nghĩa Mác-Leenin*, Nxb. Chính trị quốc gia, Hà Nội.
- Hội đồng Trung ương (2008), *Giáo trình Chủ nghĩa xã hội khoa học*, Nxb. Chính trị quốc gia, Hà Nội.

## 5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
<b>5.1. Kiến thức</b>					
LO.1	NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC	LO.1.1 – Khái lược sự ra đời Chủ nghĩa xã hội khoa học, hoàn cảnh lịch sử và vai trò của Các Mác và PH.Ăngghen LO.1.2 – Nhận biết được các giai đoạn phát triển cơ bản của Chủ nghĩa xã hội khoa học thể hiện qua các tác phẩm LO.1.3 – Nắm rõ được đối tượng, phương pháp và ý nghĩa của việc nghiên cứu Chủ nghĩa xã hội khoa học	2.1	1.1.3	13
LO.2	SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN	LO.2.1- Hiểu rõ khái niệm giai cấp công nhân và đặc điểm của giai cấp công nhân LO.2.2 – Nắm rõ nội dung, đặc điểm sứ mệnh lịch sử của giai cấp công nhân LO.2.3 – Giải thích được những điều kiện quy định sứ mệnh lịch sử của giai cấp công nhân LO.2.4 – Phân tích được những điểm tương đồng và khác biệt của giai cấp công nhân hiện nay và việc thực hiện sứ mệnh của giai cấp công nhân trên thế giới hiện nay LO.2.5 – Nắm rõ những đặc điểm cơ bản của giai cấp công nhân Việt Nam và nội dung sứ mệnh lịch sử của giai cấp công nhân Việt Nam hiện nay LO.2.6 – Trình bày được phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay	2.1 2.1 2.1 2.1 2.1 2.2	1.1.3	T4
LO.3	CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.3.1 – Hiểu rõ Chủ nghĩa xã hội là giai đoạn đầu của hình thái kinh tế - xã hội công sản chủ nghĩa LO.3.2 – Trình bày được những đặc trưng cơ bản của chủ nghĩa xã hội LO.3.3 – Giải thích được tính chất quan trọng của thời kỳ quá độ lên chủ nghĩa xã hội và những đặc điểm cơ bản của thời kỳ quá độ lên chủ nghĩa xã hội	2.1	1.1.3	I3

		LO.3.4 – Hiểu rõ đặc trưng của thời kỳ quá độ và chủ nghĩa xã hội ở Việt Nam, trình bày được những phương hướng xây dựng chủ nghĩa xã hội ở Việt Nam hiện nay			
LO.4	DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NUỐC XÃ HỘI CHỦ NGHĨA	LO.4.1 – Giải thích được quan niệm về dân chủ và sự ra đời và phát triển dân chủ trong lịch sử xã hội loài người LO.4.2 – Nắm rõ quá trình ra đời và bản chất của nền dân chủ xã hội chủ nghĩa LO.4.3 – Hiểu được sự ra đời, bản chất và chức năng của nhà nước xã hội chủ nghĩa cũng như mối quan hệ giữa dân chủ và nhà nước LO.4.4 - hiểu được sự ra đời phát triển và bản chất của nền dân chủ xã hội chủ nghĩa ở Việt Nam LO.4.5 - trình bày được đặc điểm và các giải pháp cơ bản nhằm xây dựng nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam hiện nay	2.1  2.1  2.1  2.1  2.1 2.2	1.1.3	T4
LO.5	CƠ CẤU XÃ HỘI GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.5.1 – Trình bày được khái niệm cơ cấu xã hội – khái quát và sự biến đổi của cơ cấu xã hội giai cấp trong thời kì quá độ lên chủ nghĩa xã hội LO.5.2 – giải thích được tính tắt yếu của liên minh giai cấp, tầng trong thời kỳ quá độ lên chủ nghĩa xã hội LO.5.3 – Hiểu rõ cơ cấu xã hội – giai cấp ở Việt Nam trong thời kì quá độ và trình bày những giải pháp cơ bản nhằm xây dựng, phát triển lối liên minh giai cấp, tầng lớp xã hội ở Việt Nam	2.1	1.1.3	I3
LO.6	VẤN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.6.1 – Hiểu rõ khái niệm, đặc trưng cơ bản của dân tộc và quan điểm của chủ nghĩa Mác – Leenin về vấn đề dân tộc LO.6.2 – Trình bày được những đặc điểm cơ bản của dân tộc ở Việt Nam và quan điểm chính sách dân tộc của Đánh và Nhà nước Việt Nam LO.6.3 – Hiểu được bản chất, nguồn gốc, tính chất của tôn giáo và nguyên tắc cơ bản giải quyết vấn đề tôn giáo trong thời kỳ quá độ lên chủ nghĩa xã hội	2.1  2.1  2.1	1.1.3	T4

		LO.6.4 – Giải thích được những đặc điểm tôn giáo ở Việt Nam và chính sách của Đảng và Nhà nước Việt Nam đối với tín ngưỡng tôn giáo hiện nay  LO.6.5 – Hiểu rõ được đặc điểm quan hệ dân tộc và tôn giáo ở Việt Nam và trình bày được các định hướng cơ bản nhằm giải quyết mối quan hệ giữa dân tộc và tôn giáo ở Việt Nam hiện nay	2.1 2.2  2.1 2.2			
LO.7	VĂN ĐỀ GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI	LO.7.1 – Khái lược được vị trí, chức năng và vai trò của gia đình trong xã hội  LO.7.2 – Nhận biết được các cơ sở xây dựng gia đình trong thời kỳ quá độ lên chủ nghĩa xã hội  LO.7.3 – Giải thích được sự biến đổi của gia đình Việt Nam trong thời kỳ quá độ và trình bày được những phương hướng cơ bản xây dựng và phát triển gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội	2.1	1.1.3	I3	
<b>5.2. Kỹ năng</b>						
LO.8	THỂ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANG LUẬN, PHẢN BIÊN, LÀM VIỆC NHÓM	LO.8.1 – Có kỹ năng khái quát hóa để rút ra <i>Tùy khóa tri thức</i> đối với mỗi nội dung và tư duy với hệ thống  LO.8.2 – Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn  LO.8.3 – Có kỹ năng giao tiếp xã hội, hợp tác và làm việc nhóm, chia sẻ tri thức và kinh nghiệm, khả năng điều hành nhóm làm việc	2.1 2.2	2.1.1 2.3.1  2.4.4  2.5 3.1.5	U4	
LO.9	THỂ HIỆN Ý THỨC NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.9.1 – Có ý thức trách nhiệm bảo vệ tính khoa học, cách mạng trong lý luận của chủ nghĩa Mác – Leenin về CNXH và con đường đi lên CNXH ở Việt Nam  LO.9.2 – Có ý thức, trách nhiệm cá nhân đối với tập thể, cộng đồng  LO.9.3 – Có nhận thức về sự cần thiết học tập, nghiên cứu suốt đời và vận dụng nó trong cuộc sống	2.1 2.2	3.1	U3	

**6. Kế hoạch giảng dạy theo buổi học (Course Plan):**

TT (tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1 (tiết 1)	Giới thiệu về môn học	LO.1 LO.4	<p><b>Dạy:</b></p> <ul style="list-style-type: none"> <li>- Giới thiệu đề cương môn học</li> <li>- Giới thiệu nội dung đề tài thuyết trình nhóm (GHW)</li> </ul> <p><b>Học ở lớp:</b></p> <ul style="list-style-type: none"> <li>- Chia nhóm (5 SV/nhóm)</li> <li>- Giới thiệu nhóm học tập</li> </ul> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Chọn đề tài thuyết trình của nhóm (GHW)</li> <li>- Đọc trước tài liệu chương 1.</li> </ul>	
2	<p><b>Chương 1</b> <b>NHẬP MÔN CHỦ NGHĨA XÃ HỘI KHOA HỌC</b></p>		<p><b>Dạy:</b></p> <p>1.SỰ RA ĐỜI CỦA CHỦ NGHĨA XÃ HỘI KHOA HỌC</p> <p>1.1. Hoàn cảnh lịch sử sự ra đời của chủ nghĩa xã hội khoa học</p> <p>1.2. Vai trò của C. Mác và Ăngghen</p> <p>2.CÁC GIAI ĐOẠN PHÁT TRIỂN CƠ BẢN CỦA CHỦ NGHĨA XÃ HỘI KHOA HỌC</p> <p>2.1. C. Mác và Ph. Ăngghen phát triển chủ nghĩa xã hội khoa học</p> <p>2.2. V.I.Lênin vận dụng và phát triển sáng tạo chủ nghĩa xã hội khoa học trong điều kiện mới</p> <p>2.3. Sự vận dụng và phát triển sáng tạo chủ nghĩa xã hội khoa học từ sau khi lenin qua đời đến nay</p> <p>3. ĐỐI TƯỢNG, PHƯƠNG PHÁP VÀ Ý NGHĨA CỦA VIỆC NGHIÊN CỨU CHỦ NGHĨA XÃ HỘI KHOA HỌC</p> <p>3.1. Đối tượng nghiên cứu của chủ nghĩa xã hội khoa học</p> <p>3.2. Phương pháp nghiên cứu của chủ nghĩa xã hội khoa học</p> <p>Ý nghĩa của việc nghiên cứu chủ nghĩa xã hội khoa học</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Phác thảo nội dung thuyết trình nhóm GHW</li> <li>- Đọc trước tài liệu chương 2.</li> </ul>	Thi giữa kì (Quiz)
3	<p><b>Chương 2</b> <b>SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN</b></p>	LO.2 LO.4 LO.5	<p><b>Dạy:</b></p> <p>1. QUAN ĐIÈM CƠ BẢN CỦA CHỦ NGHĨA MÁC - LENIN VỀ GIAI CẤP CÔNG NHÂN VÀ SỨ MỆNH LỊCH SỬ THẾ GIỚI CỦA GIAI CẤP CÔNG NHÂN</p> <p>1.1. Khái niệm và đặc điểm của giai cấp công nhân</p> <p>1.2. Nội dung và đặc điểm sứ mệnh lịch sử của giai cấp công nhân</p> <p>1.3. Những điều kiện quy định sứ mệnh lịch sử của giai cấp công nhân</p> <p>2. GIAI CẤP CÔNG NHÂN VÀ VIỆC THỰC HIỆN SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN HIỆN NAY</p>	Thi giữa kỳ (Quiz)

			<p>2.1. Giai cấp công nhân hiện nay      2.2. Thực hiện sứ mệnh lịch sử của giai cấp công nhân trên thế giới hiện nay</p> <p><b>3.SỨ MỆNH LỊCH SỬ CỦA GIAI CẤP CÔNG NHÂN VIỆT NAM</b></p> <p>3.1. Đặc điểm của giai cấp công nhân Việt Nam      3.2. Nội dung sứ mệnh lịch sử của giai cấp công nhân Việt Nam hiện nay      3.3. Phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp  <b>Học ngoài lớp:</b>      Đọc trước tài liệu chương 3</p>	
4	<p><b>Chương 3</b>  <b>CHỦ NGHĨA XÃ HỘI VÀ THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</b></p>	<p>LO.3      LO.4      LO.5</p>	<p><b>Dạy:</b></p> <p>1. CHỦ NGHĨA XÃ HỘI</p> <p>1.1. Chủ nghĩa xã hội, giai đoạn đầu của hình thái kinh tế - xã hội công sản chủ nghĩa      1.2. Điều kiện ra đời chủ nghĩa xã hội      1.3. Những đặc trưng cơ bản của chủ nghĩa xã hội</p> <p>2. THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</p> <p>2.1. Tính chất yếu quan của thời kỳ quá độ lên chủ nghĩa xã hội      2.2. Đặc điểm của thời kỳ quá độ lên chủ nghĩa xã hội</p> <p>3. QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM</p> <p>3.1. Quá độ lên chủ nghĩa xã hội bở qua chế độ tư bản chủ nghĩa      3.2. Những đặc trưng cơ bản của chủ nghĩa xã hội và phương hướng xây dựng chủ nghĩa xã hội ở Việt Nam hiện nay</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp  <b>Học ngoài lớp:</b>      Đọc trước tài liệu chương 4</p>	<p>Thuyết trình nhóm (GHW)</p> <p>Thi giữa kỳ (Quiz)</p>
5	<p><b>Chương 4</b>  <b>DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA</b></p>	<p>LO.2      LO.4      LO.5</p>	<p><b>Dạy:</b></p> <p>1. DÂN CHỦ VÀ DÂN CHỦ XÃ HỘI CHỦ NGHĨA</p> <p>1.1. Dân chủ và sự ra đời, phát triển của dân chủ      1.2. Dân chủ xã hội chủ nghĩa</p> <p>2. NHÀ NƯỚC XÃ HỘI CHỦ NGHĨA</p> <p>2.1. Sự ra đời, bản chất, chức năng của nhà nước xã hội chủ nghĩa      2.2. Mối quan hệ giữa dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa</p> <p>3. DÂN CHỦ XÃ HỘI CHỦ NGHĨA VÀ NHÀ NƯỚC PHÁP QUYỀN XÃ HỘI CHỦ NGHĨA Ở VIỆT NAM</p> <p>3.1. Dân chủ xã hội chủ nghĩa ở Việt Nam      3.2. Nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam hiện nay      3.3. Phát huy dân chủ xã hội chủ nghĩa, xây</p>	<p>Thuyết trình nhóm (GHW)</p> <p>Thi cuối kỳ (FEX)</p>

			dựng nhà nước pháp quyền xã hội chủ nghĩa ở Việt Nam <b>Học ở lớp:</b> Thảo luận và phát biểu <b>Học ngoài lớp:</b> Đọc trước tài liệu chương 5 trên lớp	
6	<b>Chương 5</b> <b>CƠ CẤU XÃ HỘI – GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</b>	LO.3 LO.4 LO.5	<b>Dạy:</b> 1. CƠ CẤU XÃ HỘI GIAI CẤP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1.1. Khái niệm và vị trí của cơ cấu xã hội - giai cấp trong cơ cấu xã hội 1.2. Sự biến đổi có tính quy luật của cơ cấu xã hội - giai cấp trong thời kỳ quá độ lên chủ nghĩa xã hội 2. LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 3. CƠ CẤU XÃ HỘI - GIAI CẤP VÀ LIÊN MINH GIAI CẤP, TẦNG LỚP TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM 3.1. Cơ cấu xã hội - giai cấp trong thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam 3.2. Liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam <b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp <b>Học ngoài lớp:</b> Đọc trước tài liệu chương 6	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)
7	<b>Chương 6</b> <b>VĂN ĐỀ DÂN TỘC VÀ TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</b>	LO.2 LO.4 LO.5	<b>Dạy:</b> 1. DÂN TỘC TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 1.1. Chủ nghĩa Mác - Lenin về dân tộc 1.2. Dân tộc và quan hệ dân tộc ở Việt Nam 2. TÔN GIÁO TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI 2.1. Chủ nghĩa Mác - Lenin về tôn giáo 2.2. Tôn giáo ở Việt Nam và chính sách tôn giáo của Đảng, Nhà nước ta hiện nay 3. QUAN HỆ DÂN TỘC VÀ TÔN GIÁO Ở VIỆT NAM 3.1. Đặc điểm quan hệ dân tộc và tôn giáo ở Việt Nam 3.2. Định hướng giải quyết mối quan hệ dân tộc và tôn giáo ở Việt Nam hiện nay 3.3. Phương hướng và một số giải pháp chủ yếu để xây dựng giai cấp công nhân Việt Nam hiện nay <b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp <b>Học ngoài lớp:</b> Đọc trước tài liệu chương 7	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)
			<b>Dạy:</b> 1. KHÁI NIỆM, VỊ TRÍ VÀ CHỨC NĂNG CỦA GIA ĐÌNH 1.1. Khái niệm gia đình 1.2. Vị trí của gia đình trong xã hội 1.3. Chức năng cơ bản của gia đình	

8	<b>Chương 7</b> <b>VẤN ĐỀ GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</b>		<p>2.CƠ SỞ XÂY DỰNG GIA ĐÌNH TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</p> <p>2.1. Cơ sở kinh tế - xã hội</p> <p>2.2. Cơ sở chính trị - xã hội</p> <p>2.3. Cơ sở văn hóa</p> <p>3.XÂY DỰNG GIA ĐÌNH VIỆT NAM TRONG THỜI KỲ QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI</p> <p>3.1. Sự biến đổi gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội</p> <p>3.2. Phương hướng cơ bản xây dựng và phát triển gia đình Việt Nam trong thời kỳ quá độ lên chủ nghĩa xã hội</p> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b> Hoàn thiện bài thuyết trình</p>	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)
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## 7. Đánh giá môn học

ST T	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	15%	Thuyết trình và bản báo cáo nhóm	LO.3 LO.4 LO.5 LO.6 LO.7
2	Quiz	Bài thi giữa	Thi theo đề thi của GV	20%	Tự luận đề mở	LO.1 LO.2 LO.3
3	DIC	Thảo luận, chuyên cần tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.3 LO.4 LO.5 LO.6 LO.7
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận đề đóng	LO.3 LO.4 LO.5 LO.6 LO.7
			<b>Tổng cộng</b>	<b>100%</b>		

## 8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	Nhận biết quá trình ra đời của Chủ nghĩa xã hội khoa học và các giai đoạn phát triển cơ bản	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2 LO.4	Nắm rõ nội dung; quan điểm cơ bản của chủ nghĩa Mác - Lê nin về giai cấp công nhân, nội dung, biểu hiện và ý nghĩa của sứ mệnh đó trong bối cảnh hiện nay	Chương 2	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.3 LO.4	Nhận biết và nắm được những quan điểm cơ bản của chủ nghĩa Mác - lénin về chủ nghĩa xã hội, thời kỳ quá độ lên chủ nghĩa xã hội và sự vận dụng sáng tạo của Đảng Cộng sản Việt Nam vào điều kiện cụ thể của Việt Nam	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi giữa kỳ (Quiz)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của GV
LO.3 LO.4	Nhận biết và nắm được bản chất của nền dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa nói chung và ở Việt Nam nói riêng	Chương 4	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa
LO.3 LO.4	Nhận biết và nắm được những kiến thức nền tảng về cơ cấu xã hội - giai cấp và liên minh giai cấp, tầng lớp trong thời kỳ quá độ độ lên chủ nghĩa xã hội	Chương 5	Thảo luận tại lớp (Discussion in Class), Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa
LO.3 LO.4	Nhận biết và nắm được những quan điểm cơ bản của chủ nghĩa Mác - Lê nin về dân tộc, tôn giáo, mối quan hệ giữa dân tộc và tôn giáo, tầm quan trọng của vấn đề dân tộc, tôn giáo và nội dung chính sách dân tộc, tôn giáo của Đảng và Nhà nước Việt Nam	Chương 6	Thảo luận tại lớp (Discussion in Class), Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa
LO.3 LO.4	Nhận biết và nắm được những quan điểm cơ bản của chủ nghĩa Mác - Lê nin, tư tưởng Hồ Chí Minh và Đảng Cộng sản Việt Nam về gia đình, xây dựng gia đình trong thời kỳ quá độ lên chủ nghĩa xã hội hiện nay.	Chương 7	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm, thảo luận tại lớp Ngân hàng đề thi của Khoa

## **9. Một số lưu ý khác:**

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: [daotao.spas@vnuhcm.edu.vn](mailto:daotao.spas@vnuhcm.edu.vn)

- Quy định về Bài thuyết trình nhóm GHW

+ Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2 hoặc trực tiếp nộp cho GV buổi 1.

+ Giảng dạy kết thúc chương 3, các nhóm thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình

+ Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV

- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế. Có đầy đủ điểm kiểm tra, điểm thi kết thúc học phần và nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

*TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2019*

**KT. TRƯỞNG KHOA PHÓ TRƯỞNG KHOA**

**TS. Nguyễn Đình Quốc Cường**



### ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

**Lịch sử Đảng Cộng sản Việt Nam**  
(History of Vietnamese communist party)

#### 1. Thông tin chung

Tên môn học (tiếng Việt);	Lịch sử Đảng Cộng sản Việt Nam
Tên môn học (tiếng Anh):	History of Vietnamese communist party
Mã số môn học:	PE018IU
Thuộc khối kiến thức:	CƠ SỞ
Số tín chỉ:	2
Số tiết lý thuyết:	20 (trên lớp)
Số tiết thực hành:	10 (trên lớp)
Số tiết tự học:	90 (về nhà)
Môn học trước:	1. Triết học Mác - Lê nin, 2. Kinh tế chính trị Mác - Lê nin, 3. Chủ nghĩa xã hội khoa học
Giảng viên phụ trách	Khoa Chính trị - Hành chính, ĐHQG-HCM

#### 2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

2.1 *Về nội dung*: cung cấp những tri thức có tính hệ thống, cơ bản về sự ra đời của Đảng Cộng sản Việt Nam (1920-1930), sự lãnh đạo của Đảng đối với cách mạng Việt Nam trong thời kỳ đấu tranh giành chính quyền (1930-1945), trong hai cuộc kháng chiến chống thực dân Pháp và đế quốc Mỹ xâm lược (1945-1975), trong sự nghiệp xây dựng, bảo vệ tổ quốc thời kỳ cả nước quá độ lên chủ nghĩa xã hội, tiến hành công cuộc đổi mới (1975-2018).

2.2 *Về tư tưởng*: Thông qua các sự kiện lịch sử và các kinh nghiệm về sự lãnh đạo của Đảng để xây dựng ý thức tôn trọng sự thật khách quan, nâng cao lòng tự hào, niềm tin đối với sự nghiệp lãnh đạo của Đảng.

2.3 *Về kỹ năng*: Trang bị phương pháp tư duy khoa học về lịch sử, kỹ năng lựa chọn tài liệu nghiên cứu, học tập môn học và khả năng vận dụng nhận thức lịch sử vào công tác thực tiễn, phê phán quan niệm sai trái về lịch sử của Đảng.

#### 3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về Lịch sử Đảng Cộng sản Việt Nam

#### 4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Chương trình môn học Lịch sử Đảng Cộng sản Việt Nam*, ban hành 2019.

- Hội đồng Trung ương chỉ đạo biên soạn giáo trình quốc gia các môn khoa học Mác — Lê nin, Tư tưởng Hồ Chí Minh (2018), *Giáo trình Lịch sử Đảng Cộng sản Việt Nam (tái bản có sửa chữa, bổ sung)*, Nxb. Chính trị quốc gia, Hà Nội.

#### 5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
5.7. <i>Kiến thức</i>					
LO.1	NHẬP MÔN ĐỒI TUỢNG, CHỨC NĂNG, NHIỆM VỤ, NỘI DUNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM	LO. 1.1 - Năm rõ được đối tượng, mục đích học tập, nghiên cứu và một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu Lịch sử Đảng Cộng sản Việt Nam	2.1	1.1.3	13
LO.2	ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ LÃNH ĐẠO ĐẤU TRanh GIÀNH CHÍNH QUYỀN (1930-1945)	LO.2.1 - Năm được bối cảnh lịch sử tác động đến sự ra đời của Đảng Cộng sản Việt Nam LO.2.2 - Năm được quá trình chuẩn bị các điều kiện để thành lập Đảng của Nguyễn Ái Quốc LO.2.3 - Năm được nội dung hội nghị thành lập Đảng và Cương lĩnh chính trị đầu tiên của Đảng LO.2.4 - Hiểu được ý nghĩa lịch sử của việc thành lập Đảng Cộng sản Việt Nam LO.2.5 - Năm rõ các phong trào cách mạng 1930-1935 và các chủ trương khôi phục phong trào năm 1932-1935 LO.2.6 - Năm rõ phong trào dân chủ năm 1936-1939 LO.2.7 - Năm rõ phong trào giải phóng dân tộc 1939-1945 LO.2.8 - Hiểu rõ tính chất, ý nghĩa và kinh nghiệm của Cách mạng Tháng Tám năm 1945	2.1 2.1 2.1 2.1 2.1 2.1	1.1.3 T4	

LO.3	ĐẢNG LÃNH ĐẠO HAI CUỘC KHÁNG CHIẾN, HOÀN THÀNH GIẢI PHÓNG DÂN TỘC, THỐNG NHẤT ĐẤT NƯỚC (1945-1975)	LO.3.1 - Hiểu được chủ trương xây dựng và bảo vệ chính quyền cách mạng 1945-1946	2.1	1.1.3	T4
		LO.3.2 - Hiểu rõ Đường lối kháng chiến toàn quốc chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946-1950			
		LO.3.3 - Hiểu rõ chủ trương Đầu mạnh cuộc kháng chiến chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946 đến năm 1950	2.1	1.1.3	T4
		LO.3.4 - Hiểu rõ Ý nghĩa lịch sử và kinh nghiệm của Đảng trong lãnh đạo kháng chiến chống thực dân Pháp và can thiệp Mỹ			
		LO.3.5 - Nắm được quá trình lãnh đạo cách mạng hai miền giai đoạn 1954-1965 của Đảng	2.1	1.1.3	T4
		LO.3.6 - Nắm vững sự lãnh đạo cách mạng cả nước giai đoạn 1965-1975 của Đảng			
		LO.3.7 - Hiểu rõ Ý nghĩa và kinh nghiệm lãnh đạo của Đảng trong cuộc kháng chiến chống Mỹ, cứu nước 1954-1975			

LO.4	ĐẢNG LÃNH ĐẠO CẢ NƯỚC QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI VÀ TIẾN HÀNH CÔNG CUỘC ĐỔI MỚI (1975-2018)	LO.4.1 - Hiểu rõ chủ trương xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981	2.1	1.1.3	T4
		LO.4.2 - Nắm rõ nội dung Đại hội đại biểu toàn quốc lần thứ V của Đảng và các bước đột phá tiếp tục đổi mới kinh tế 1982-1986			
		LO.4.3 – Nắm rõ quan điểm Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996 của Đảng			
		LO.4.4 - Nắm rõ thành tựu, kinh nghiệm của công cuộc đổi mới	2.2	1.1.3	T4
		LO.4.5 - Hiểu rõ những thắng lợi vĩ đại của cách mạng Việt Nam dưới sự lãnh đạo của Đảng từ năm			
		LO.4.6 - Hiểu rõ những bài học lớn về sự lãnh đạo của Đảng từ năm 1930 đến 2018			

### 5.2. Kỹ năng

LO.5	THẾ HIỆN KHẢ NĂNG KHÁI QUÁT HÓA, TƯ DUY, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	<p>LO.5.1. Rèn luyện năng lực tư duy độc lập trong nghiên cứu đường lối, chiến lược, sách lược cách mạng của Đảng.</p> <p>LO.5.2. Có tư duy phê phán, kỹ năng phân tích, tổng hợp và đánh giá những vấn đề liên quan đến môn học. Từ đó, vận dụng kiến thức đã học để chủ động, tích cực nhận thức những vấn đề chính trị, kinh tế, văn hoá, xã hội theo đường lối, chính sách, pháp luật của Đảng và Nhà nước.</p> <p>LO.5.3 Có kỹ năng viết, kỹ năng làm việc cá nhân, làm việc nhóm và trình bày kết quả nghiên cứu.</p>	2.1 2.2 2.3	2.1.1 2.3.1  2.4.4  2.5 3.1.5	U4
<b>5.3. Thái độ</b>					
LO.6	THẾ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	<p>LO.6.1. Tin tưởng vào sự lãnh đạo của Đảng đối với cách mạng Việt Nam.</p> <p>LO.6.2. Quyết tâm phấn đấu thực hiện đường lối cách mạng của Đảng.</p> <p>LO.6.3. Có thái độ nghiêm túc trong học tập, nghiên cứu khoa học, trong nhận thức về cuộc sống, xã hội, tự rèn luyện bản thân trở thành người có phẩm chất, bản lĩnh chính trị vững vàng, có đạo đức, trình độ chuyên môn tốt; hình thành tình cảm, niềm tin vào con đường cách mạng mà dân tộc ta đã lựa chọn.</p>	2.1 2.2 2.3	3.1	U3

### 6. Kế hoạch giảng dạy môn học (Course Plan):

Buổi (3 tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1	<b>Giới thiệu về môn học</b>	LO.1, LO.5;	<p><b>Dạy:</b></p> <ul style="list-style-type: none"> <li>- Giới thiệu đề cương môn học</li> <li>- Giới thiệu nội dung đề tài thuyết trình nhóm GHW)</li> </ul> <p><b>Học ở lớp:</b></p> <ul style="list-style-type: none"> <li>- Chia nhóm (5 SV/nhóm)</li> <li>- Giới thiệu nhóm học tập</li> </ul> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Chọn đề tài thuyết trình của nhóm (GHW)</li> </ul>	

2	<p><b>Chương nhập môn</b></p> <p><b>ĐỐI TƯỢNG, CHỨC NĂNG, NHIỆM VỤ, NỘI DUNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM</b></p>	LO.1;	<p><b>Dạy:</b></p> <p>I. ĐỐI TƯỢNG NGHIÊN CỨU CỦA MÔN HỌC LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM</p> <ol style="list-style-type: none"> <li>1. Đối tượng nghiên cứu</li> <li>2. Phạm vi nghiên cứu</li> </ol> <p>II. CHỨC NĂNG, NHIỆM VỤ CỦA MÔN HỌC LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM</p> <ol style="list-style-type: none"> <li>1. Chức năng của khoa học Lịch sử Đảng</li> <li>2. Nhiệm vụ của môn học</li> </ol> <p>III. PHƯƠNG PHÁP NGHIÊN CỨU, HỌC TẬP MÔN LỊCH SỬ ĐẢNG CỘNG SẢN VIỆT NAM</p> <ol style="list-style-type: none"> <li>1. Phương pháp luận</li> <li>2. Các phương pháp cụ thể</li> </ol> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Phác thảo nội dung thuyết trình nhóm GHW</li> <li>- Đọc trước tài liệu chương 1.</li> </ul>	Thi giữa kỳ (Quiz)
3	<p><b>Chương 1</b></p> <p><b>ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ LÃNH ĐẠO ĐẤU TRanh GIÀNH CHÍNH QUYỀN (1930-1945)</b></p>	LO.2	<p><b>Dạy:</b></p> <p>I. ĐẢNG CỘNG SẢN VIỆT NAM RA ĐỜI VÀ CƯƠNG LĨNH CHÍNH TRỊ ĐẦU TIÊN CỦA ĐẢNG (THÁNG 2-1930)</p> <ul style="list-style-type: none"> <li>. Bối cảnh lịch sử</li> <li>. Nguyễn Ái Quốc chuẩn bị các điều kiện để thành lập Đảng</li> <li>. Thành lập Đảng Cộng sản Việt Nam và Cương lĩnh chính trị đầu tiên của Đảng</li> <li>. Ý nghĩa lịch sử của việc thành lập Đảng Cộng sản Việt Nam</li> </ul> <p>II. ĐẢNG LÃNH ĐẠO ĐẤU TRanh GIÀNH CHÍNH QUYỀN (1930-1945)</p> <ol style="list-style-type: none"> <li>1. Phong trào cách mạng 1930- 1935 và khôi phục phong trào 1932-1935</li> <li>2. Phong trào dân chủ 1936-1939</li> <li>3. Phong trào giải phóng dân tộc 1939-1945</li> <li>4. Tính chất, ý nghĩa và kinh nghiệm của Cách mạng Tháng Tám năm 1945</li> </ol> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <p>Đọc trước tài liệu chương 2</p>	<p>Thi giữa kỳ (Quiz)</p> <p>Thi cuối kỳ (FEX)</p>

4	<p style="text-align: center;"><b>Chương 2</b></p> <p><b>ĐẢNG LÃNH ĐẠO HAI CUỘC KHÁNG CHIẾN, HOÀN THÀNH GIẢI PHÓNG DÂN TỘC, THỐNG NHẤT ĐẤT NƯỚC (1945-1975)</b></p>	LO.3 LO.5	<p><b>Dạy:</b></p> <p>I. ĐẢNG LÃNH ĐẠO XÂY DỰNG, BẢO VỆ CHÍNH QUYỀN CÁCH MẠNG VÀ KHÁNG CHIẾN CHỐNG THỰC DÂN PHÁP XÂM LUỢC (1945-1954)</p> <p>1. Xây dựng và bảo vệ chính quyền cách mạng 1945-1946</p> <p>2. Đường lối kháng chiến toàn quốc chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946-1950</p> <p>3. Đẩy mạnh cuộc kháng chiến chống thực dân Pháp xâm lược và quá trình tổ chức thực hiện từ năm 1946 đến năm 1950</p> <p>4. Ý nghĩa lịch sử và kinh nghiệm của Đảng trong lãnh đạo kháng chiến chống thực dân Pháp và can thiệp Mỹ</p> <p><b>Dạy:</b> Chấm thuyết trình &amp; phản biện</p> <p><b>Học ở lớp:</b> Các nhóm thuyết trình tại lớp</p> <p>II. LÃNH ĐẠO XÂY DỰNG CHỦ NGHĨA XÃ HỘI Ở MIỀN BẮC VÀ KHÁNG CHIẾN CHỐNG ĐẾ QUỐC MỸ XÂM LUỢC GIẢI PHÓNG MIỀN NAM, THỐNG NHẤT ĐẤT NƯỚC (1954-1975)</p> <p>1. Lãnh đạo cách mạng hai miền giai đoạn 1954-1965</p> <p>2. Lãnh đạo cách mạng cả nước giai đoạn 1965-1975</p> <p>3. Ý nghĩa và kinh nghiệm lãnh đạo của Đảng trong cuộc kháng chiến chống Mỹ, cứu nước 1954-1975</p> <p><b>Học ngoài lớp:</b> Đọc trước tài liệu chương 2</p>	Thuyết trình nhóm (GHW)  Thi cuối kỳ (FEX)

			<b>Dạy</b> I. ĐẢNG LÃNH ĐẠO CẢ NƯỚC XÂY DỰNG CHỦ NGHĨA XÃ HỘI VÀ BẢO VỆ TÔ QUỐC (1975-1986) 1. Xây dựng chủ nghĩa xã hội và bảo vệ Tổ quốc 1975-1981 2. Đại hội đại biểu toàn quốc lần thứ V của Đảng và các bước đột phá tiếp tục đổi mới kinh tế 1982-1986 <b>Dạy:</b> Chấm thuyết trình & phản biện <b>Học ở lớp:</b> Thảo luận tại lớp II. LÃNH ĐẠO CÔNG CUỘC ĐỔI MỚI, ĐẦY MẠNH CÔNG NGHIỆP HÓA, HIỆN ĐẠI HÓA VÀ HỘI NHẬP QUỐC TẾ (1986-2018) 1. Đổi mới toàn diện, đưa đất nước ra khỏi khủng hoảng kinh tế - xã hội 1986-1996 2. Tiếp tục công cuộc đổi mới, đẩy mạnh công nghiệp hóa, hiện đại hóa và hội nhập quốc tế 1996-2018 3. Thành tựu, kinh nghiệm của công cuộc đổi mới <b>TỔNG LUẬN</b> 1. Những thắng lợi vĩ đại của cách mạng Việt Nam 2. Những bài học lớn về sự lãnh đạo của Đảng <b>Học ngoài lớp:</b> Hoàn thiện bài thuyết trình	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)
5	<b>Chương 3</b> ĐẢNG LÃNH ĐẠO CẢ NƯỚC QUÁ ĐỘ LÊN CHỦ NGHĨA XÃ HỘI VÀ TIẾN HÀNH CÔNG CUỘC ĐỔI MỚI (1975-2018)	LO.4 LO.5		

## 7. Đánh giá môn học

STT	Mã	Tên	Mô tả	Tỷ trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	20%	Thuyết trình và bản báo cáo nhóm	LO.3 LO.4 LO.5
2	Quiz	Bài thi giữa kỳ	Thi theo đề thi chung	30%	Tự luận	LO.1 LO.2;

3	DIC	Thảo luận tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	Cộng tối đa 1 điểm vào bài thi cuối kỳ	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	
4	FEX	Thi cuối kỳ	Đề thi bao quát toàn bộ nội dung môn học	50%	Trắc nghiệm	LO.2; LO.3, LO.4;
		<b>Tổng cộng</b>		<b>100%</b>		

## 8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	Nắm được đối tượng, mục đích học tập, nghiên cứu và một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu	Chương nhập môn	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.2	Hiểu rõ quá trình ra đời của Đảng Cộng sản Việt Nam (1920-1930), nội dung cơ bản, giá trị lịch sử của Cương lĩnh chính trị đầu tiên của Đảng và quá trình Đảng lãnh đạo cuộc đấu tranh giành độc lập, giành chính quyền (1930-1945)	Chương 1	Thi giữa kỳ (Quiz)	Ngân hàng đề thi của GV
LO.3 LO.5	Nắm rõ quá trình lãnh đạo của Đảng đối với hai cuộc kháng chiến chống thực dân Pháp và đế quốc Mỹ xâm lược, hoàn thành giải phóng dân tộc, thống nhất đất nước thời kỳ 1945-1975	Chương 2	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của GV
LO.4 LO.5	Hiểu được quá trình phát triển đường lối và sự lãnh đạo của Đảng đưa cả nước quá độ lên chủ nghĩa xã hội và tiến hành công cuộc đổi mới từ sau ngày thống nhất đất nước năm 1975 đến nay. Từ đó rút ra được những thắng lợi và những bài học kinh nghiệm trong quá trình lãnh đạo cách mạng của Đảng.	Chương 3	Thảo luận tại lớp (Discussion in Class) Thi cuối kỳ (FEX)	Ngân hàng đề của GV .

## 9. Một số lưu ý khác:

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
  - Quy định về Bài thuyết trình nhóm GH
  - Thành lập nhóm: 5 sinh viên/nhóm. Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2.
- Tuần 4 thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.

Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV

- Quy định về giờ giấc, chuyên cần, kỷ luật trong khóa học: Lên lớp đúng giờ, dự tối thiểu 80% thời gian học trên lớp (chỉ được phép vắng mặt tối đa 20% số tiết học). Nếu vắng quá số tiết quy định sẽ bị cấm thi theo quy chế. Có đầy đủ điểm kiểm tra, điểm thi kết thúc học phần & nhiệt tình thảo luận, phát biểu xây dựng bài, nghiêm túc trong giờ học.

TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2020

**KT. TRƯỞNG KHOA  
PHÓ TRƯỞNG KHOA**

(Đã kí)

TS. Nguyễn Đình Quốc Cường

## ĐỀ CƯƠNG CHI TIẾT MÔN HỌC

**Tư tưởng Hồ Chí Minh**  
(Ho Chi Minh's Thoughts)

1. Thông tin chung	
Tên môn học (tiếng Việt):	Tư tưởng Hồ Chí Minh
Tên môn học (tiếng Anh):	Ho Chi Minh's Thoughts
Mã số môn học:	PE019IU
Thuộc khối kiến thức:	Cơ sở
Số tín chỉ:	2
Số tiết lý thuyết:	20 (trên lớp)
Số tiết thực hành:	10 (trên lớp)
Số tiết tự học:	90 (về nhà)
Môn học trước:	1. Triết học Mác - Lê nin, 2. Kinh tế chính trị Mác - Lê nin, 3. Chủ nghĩa xã hội khoa học

Giảng viên phụ trách Khoa Chính trị - Hành chính, ĐHQG-HCM

### 2. Mục đích/mục tiêu môn học (Course Purposes/Aims)

**2.1. Về kiến thức:** Trang bị cho sinh viên những kiến thức cơ bản về khái niệm, nguồn gốc, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; những nội dung cơ bản của tư tưởng Hồ Chí Minh; sự vận dụng của Đảng Cộng sản Việt Nam trong cách mạng dân tộc dân chủ và cách mạng xã hội chủ nghĩa, trong công cuộc đổi mới đất nước hiện nay.

**2.2. Về kỹ năng:** Giúp cho sinh viên khả năng tư duy, phân tích, đánh giá, vận dụng sáng tạo tư tưởng Hồ Chí Minh vào giải quyết các vấn đề trong thực tiễn đời sống, học tập và công tác.

**2.3. Về thái độ:** Giúp sinh viên nâng cao về bản lĩnh chính trị, yêu nước, trung thành với mục tiêu, lý tưởng độc lập dân tộc gắn liền với chủ nghĩa xã hội; nhận thức được vai trò, giá trị của tư tưởng Hồ Chí Minh đối với Đảng và dân tộc Việt Nam; thấy được trách nhiệm của bản thân trong việc học tập, rèn luyện để góp phần vào xây dựng và bảo vệ Tổ quốc.

### 3. Mô tả môn học (Course Outlines)

Môn học trang bị cho sinh viên những kiến thức cơ bản về: Đổi tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh; về cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; về độc lập dân tộc và chủ nghĩa xã hội; về Đảng Cộng sản và Nhà nước Việt Nam; về đại đoàn kết dân tộc và đoàn kết quốc tế; về văn hóa, đạo đức, con người.

### 4. Tài liệu phục vụ học tập:

- Bộ Giáo dục và Đào tạo (2019), *Giáo trình Tư tưởng Hồ Chí Minh*, Nxb. Chính trị quốc gia, Hà Nội.
- Khoa Chính trị - Hành chính, ĐHQG-HCM, *Tài liệu hướng dẫn học tập Tư tưởng Hồ Chí Minh*
- Hồ Chí Minh (2011), *Toàn tập*, Nxb. Chính trị quốc gia Sự thật, Hà Nội.
- Hồ Chí Minh (2016), *Biên niên tiểu sử*, Nxb. Chính trị quốc gia Sự thật, Hà Nội.

## 5. Chuẩn đầu ra môn học (Course Learning Outcomes)

Chuẩn đầu ra	Mô tả	Tiêu chí đánh giá	Mục tiêu môn học	Chuẩn đầu ra CDIO CTĐT	Mức độ giảng dạy (I/T/U)
<b>5.1. Kiến thức</b>					
LO.1	KHÁI NIỆM ĐỐI TƯỢNG PHƯƠNG PHÁP NGHIÊN CỨU VÀ Ý NGHĨA HỌC TẬP MÔN TƯ TƯỞNG HỒ CHÍ MINH	LO.1.1 - Nắm được khái niệm tư tưởng Hồ Chí Minh LO.1.2 - Nắm rõ được đối tượng nghiên cứu LO.1.3 - Nắm được một số yêu cầu cơ bản về phương pháp học tập, nghiên cứu môn học tư tưởng Hồ Chí Minh LO.1.4 - Nắm được ý nghĩa học tập, nghiên cứu môn học tư tưởng đối với sinh viên	2.1 2.1 2.1 2.1	1.1.3	I3
LO.2	CƠ SỞ QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỂN TƯ TƯỞNG HỒ CHÍ MINH	LO.2.1 - Hiểu rõ được cơ sở thực tiễn, tiền đề lý luận và nhân tố chủ quan hình thành tư tưởng Hồ Chí Minh LO.2.2 - Hiểu rõ được quá trình hình thành và phát triển tư tưởng Hồ Chí Minh LO.2.3 - Nắm được giá trị tư tưởng Hồ Chí Minh đối với cách mạng Việt Nam và sự phát triển tiến bộ của nhân loại	2.1 2.1 2.1	1.1.3	I4
LO.3	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC VÀ CHỦ NGHĨA XÃ HỘI	LO.3.1 - Nhận thức được bản chất khoa học, cách mạng và những sáng tạo tư tưởng Hồ Chí Minh về độc lập dân tộc và cách mạng giải phóng dân tộc. LO.3.2 - Nắm được quan điểm của Hồ Chí Minh về tính tất yếu di lên chủ nghĩa xã hội, xây dựng chủ nghĩa xã hội và thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam. LO.3.3 - Nắm được quan điểm Hồ Chí Minh về mối quan hệ giữa độc lập dân tộc và chủ nghĩa xã hội. LO.3.4 - Vận dụng tư tưởng Hồ Chí Minh về độc lập dân tộc gắn liền với chủ nghĩa xã hội trong sự nghiệp cách mạng hiện nay.	2.1 2.1 2.1 2.1	1.1.3	T4

LO.4	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẢNG CỘNG SẢN VIỆT NAM VÀ NHÀ NƯỚC CỦA NHÂN DÂN, DO NHÂN DÂN, VÌ NHÂN DÂN	<p>LO.4.1 - Nắm được nội dung cơ bản tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam.</p> <p>LO.4.2 - Nắm được nội dung cơ bản tư tưởng Hồ Chí Minh về nhà nước của nhân dân, do nhân dân, vì nhân dân.</p> <p>LO.4.3 - Vận dụng tư tưởng Hồ Chí Minh vào công tác xây dựng Đảng và xây dựng Nhà nước.</p>	2.1 2.1 2.1	1.1.3	I4 I4 T4
LO.5	TƯ TƯỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT TOÀN DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ	<p>LO.5.1 - Hiểu được những quan điểm cơ bản của tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc.</p> <p>LO.5.2 - Hiểu được những quan điểm cơ bản của tư tưởng Hồ Chí Minh về đoàn kết quốc tế</p> <p>LO.5.3 - Vận dụng tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế trong giai đoạn hiện nay</p>	2.1 2.1 2.1	1.1.3	I4 T4
LO.6	TƯ TƯỞNG HỒ CHÍ MINH VỀ VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI	<p>LO.6.1 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về văn hóa.</p> <p>LO.6.2 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về đạo đức mới (đạo đức cách mạng).</p> <p>LO.6.3 - Nắm được kiến thức cơ bản tư tưởng Hồ Chí Minh về văn hóa.</p> <p>LO.6.4 - Vận dụng tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người trong việc xây dựng văn hóa, đạo đức, con người Việt Nam hiện nay.</p>	2.1 2.1 2.1 2.1	1.1.3	I4 I4 T4
<b>5.2. Kỹ năng</b>					
LO.7	THỂ HIỆN KHẢ NĂNG TƯ DUY, PHÂN TÍCH, ĐÁNH GIÁ, TRANH LUẬN, PHẢN BIỆN, LÀM VIỆC NHÓM	<p>LO.7.1 Có kỹ năng tư duy, phân tích, đánh giá tư tưởng Hồ Chí Minh.</p> <p>LO.7.2. Có kỹ năng trình bày, thuyết minh, phản biện, tranh luận, hùng biện những tri thức lý luận đang học tập, nghiên cứu dựa trên thực tiễn</p> <p>LO.7.3. Có kỹ năng vận dụng sáng tạo tư tưởng Hồ Chí Minh vào giải quyết các vấn đề trong thực tiễn đời sống, học tập và công tác.</p>	2.2 2.2 2.2	2.1.1 2.3.1 2.4.4 2.5	U4
<b>5.3. Thái độ</b>					

	THẾ HIỆN Ý THỨC, NHẬN THỨC TRONG VÀ SAU KHI HỌC TẬP	LO.6.1. Nhận thức được vai trò, giá trị của tư tưởng Hồ Chí Minh đối với Đảng và dân tộc Việt Nam. LO.6.2. Có bản lĩnh chính trị, yêu nước, trung thành với mục tiêu, lý tưởng độc lập dân tộc gắn liền với chủ nghĩa xã hội LO.6.3. Thấy được trách nhiệm của bản thân trong việc học tập, nghiên cứu, vận dụng trong cuộc sống, góp phần vào sự nghiệp xây dựng và bảo vệ Tổ quốc	2.3 2.3 2.3	3.1	U3
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#### 6. Kế hoạch giảng dạy theo buổi học (Course Plan):

Buổi (3 tiết)	Nội dung giảng dạy	LO	Hoạt động dạy và học	Đánh giá
1		LO.1,	<b>Dạy:</b> <b>Học ở lớp:</b> <b>Học ngoài lớp:</b>	
1 (tiết)	Giới thiệu về môn học	LO.5,	<p>- Giới thiệu đề cương môn</p> <p>- Giới thiệu nội dung đề tài thuyết trình nhóm GHW).</p> <p><b>Học ở lớp:</b></p> <ul style="list-style-type: none"> <li>- Chia nhóm (5 sv/nhóm)</li> <li>- Giới thiệu nhóm học tập</li> </ul> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Chọn đề tài thuyết trình của nhóm (GHW),</li> <li>- Đọc trước tài liệu chương 1.</li> </ul>	
2	<b>Chương 1</b> KHÁI NIỆM, ĐÓI TUỢNG, PHƯƠNG PHÁP NGHIÊN CỨU VÀ Ý NGHĨA HỌC TẬP MÔN TỰ TUỔNG HỒ CHÍ MINH	LO.1;	<p><b>Dạy:</b></p> <p>I. KHÁI NIỆM TỰ TUỔNG HỒ CHÍ MINH</p> <p>II. ĐÓI TUỢNG NGHIÊN CỨU MÔN HỌC TỰ TUỔNG HỒ CHÍ MINH</p> <p>III. PHƯƠNG PHÁP NGHIÊN CỨU</p> <p>3. Phương pháp luận của việc nghiên cứu tư tưởng Hồ Chí Minh</p> <p>4. Một số phương pháp cụ thể</p> <p>IV. Ý NGHĨA CỦA VIỆC HỌC TẬP MÔN HỌC TỰ TUỔNG HỒ CHÍ MINH</p> <p>1. Góp phần nâng cao năng lực tư duy lý luận</p> <p>2. Giáo dục và thực hành đạo đức cách mạng, cung cố niềm tin khoa học gắn liền với trau dồi tình cảm cách mạng, bồi dưỡng lòng yêu nước</p> <p>3. Xây dựng, rèn luyện phương pháp và phong cách công tác.</p> <p><b>Học ở lớp:</b> Trao đổi, phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <ul style="list-style-type: none"> <li>- Phác thảo nội dung thuyết trình nhóm GHW</li> <li>- Đọc trước tài liệu chương 2</li> </ul>	

3	<b>Chương 2</b> CƠ SỞ, QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỀN TƯ TUỔNG HỒ CHÍ MINH	LO.2	<p><b>Dạy:</b></p> <p>I. CƠ SỞ HÌNH THÀNH TƯ TUỔNG HỒ CHÍ MINH</p> <ol style="list-style-type: none"> <li>1. Cơ sở thực tiễn</li> <li>2. Cơ sở lý luận</li> <li>3. Nhân tố chủ quan</li> </ol> <p>II. QUÁ TRÌNH HÌNH THÀNH VÀ PHÁT TRIỀN TƯ TUỔNG HỒ CHÍ MINH</p> <ol style="list-style-type: none"> <li>1. Thời kỳ trước ngày 5-6-1911: Hình thành tư tưởng yêu nước và có chí hướng tìm con đường mới</li> <li>2. Thời kỳ từ năm 1911 đến cuối năm 1920: Dần dần hình thành tư tưởng cứu nước, giải phóng dân tộc Việt Nam theo con đường cách mạng vô sản 3; Thời kỳ từ cuối năm 1920 đến đầu năm 1930: Hình thành những nội dung cơ bản tư tưởng về cách mạng Việt Nam</li> <li>4. Thời kỳ đầu năm 1930 đến đầu năm 1941: Vượt qua thử thách, giữ vững đường lối, phương pháp cách mạng Việt Nam đúng đắn, sáng tạo</li> <li>5. Thời kỳ từ đầu năm 1941 đến tháng 9 - 1969: Tư tưởng Hồ Chí Minh tiếp tục phát triển, hoàn thiện, soi đường cho sự nghiệp cách mạng của Đảng và nhân dân ta</li> </ol> <p>III. GIÁ TRỊ TƯ TUỔNG HỒ CHÍ MINH</p> <ol style="list-style-type: none"> <li>1. Đôi với cách mạng Việt Nam</li> <li>2. Đôi với sự phát triển tiến bộ của nhân loại</li> </ol> <p><b>Học ở lớp:</b> Thảo luận và phát biểu trên lớp</p> <p><b>Học ngoài lớp:</b></p> <p>Đọc trước tài liệu chương 3</p>	Thi giữa kì (Quiz) Thi cuối kì (FEX)
4	<b>Chương 3</b> TƯ TUỔNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC GẦN LIỀN VỚI CHỦ NGHĨA XÃ HỘI	L0.3 L0.5	<p><b>Dạy:</b></p> <p>I. TƯ TUỔNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC</p> <ol style="list-style-type: none"> <li>1. Vấn đề độc lập dân tộc</li> <li>2. Về cách mạng giải phóng dân tộc</li> </ol> <p><b>Dạy:</b> Châm thuyết trình &amp; phản biện</p> <p><b>Học ở lớp:</b> Các nhóm thuyết trình tại lớp</p> <p>II. TƯ TUỔNG HỒ CHÍ MINH VỀ CHỦ NGHĨA XÃ HỘI VÀ XÂY DỰNG CHỦ NGHĨA XÃ HỘI Ở VIỆT NAM</p> <ol style="list-style-type: none"> <li>1. Tư tưởng Hồ Chí Minh về chủ nghĩa xã hội</li> <li>2. Tư tưởng Hồ Chí Minh về xây dựng chủ nghĩa xã hội ở Việt Nam</li> <li>3. Tư tưởng Hồ Chí Minh về thời kỳ quá độ lên chủ nghĩa xã hội ở Việt Nam</li> </ol> <p>III. TƯ TUỔNG HỒ CHÍ MINH VỀ MỐI QUAN HỆ GIỮA ĐỘC LẬP DÂN TỘC VÀ CHỦ NGHĨA XÃ HỘI</p> <ol style="list-style-type: none"> <li>1. Độc lập dân tộc là cơ sở, tiền đề để tiến lên chủ nghĩa xã hội</li> <li>2. Chủ nghĩa xã hội là điều kiện để đảm bảo nền độc lập dân tộc vững chắc</li> </ol> <p>IV. VẬN DỤNG TƯ TUỔNG HỒ CHÍ MINH VỀ ĐỘC LẬP DÂN TỘC GẦN LIỀN VỚI CHỦ NGHĨA XÃ HỘI TRONG SỰ NGHIỆP CÁCH MẠNG VIỆT NAM GIAI ĐOẠN HIỆN NAY</p>	Thuyết trình nhóm (GHW) Thi cuối kì (FEX)

			<p>1.Kiên định mục tiêu và con đường cách mạng mà Hồ Chí Minh đã xác định      2.Phát huy sức mạnh dân chủ xã hội chủ nghĩa      3.Củng cố, kiện toàn, phát huy sức mạnh và hiệu quả hoạt động của toàn hệ thống chính trị      4.Đấu tranh chống những biểu hiện suy thoái về tư tưởng chính trị, đạo đức, lối sống và,”tự diễn biến”, “tự chuyển hóa” trong nội bộ</p> <p><b>Học ngoài lớp:</b> Đọc trước tài liệu chương 4</p>	
5	<b>Chương 4</b> <b>TƯ TUỞNG HỒ CHÍ MINH VỀ ĐẢNG CỘNG SẢN VIỆT NAM VÀ NHÀ NƯỚC CỦA NHÂN DÂN, DO NHÂN DÂN VÀ VÌ NHÂN DÂN</b>	LO.4 LO.5	<p><b>Dạy:</b></p> <p>I. TƯ TUỞNG HỒ CHÍ MINH VỀ ĐẢNG CỘNG SẢN VIỆT NAM</p> <p>1.Tính tất yếu và vai trò lãnh đạo của Đảng Cộng sản Việt Nam      2.Đảng phải trong sạch, vững mạnh</p> <p><b>Dạy:</b> Châm thuyết trình &amp; phản biện</p> <p><b>Học ở lớp:</b> Thảo luận tại lớp</p> <p>II.TƯ TUỞNG HỒ CHÍ MINH VỀ NHÀ NƯỚC CỦA NHÂN DÂN, DO NHÂN DÂN, VÌ NHÂN DÂN</p> <p>1.Nhà nước dân chủ      2.Nhà nước pháp quyền      3.Nhà nước trong sạch, vững mạnh</p> <p>III.VẬN DỤNG TƯ TUỞNG HỒ CHÍ MINH VÀO CÔNG TÁC XÂY DỰNG ĐẢNG VÀ XÂY DỰNG NHÀ NƯỚC</p> <p>1.Xây dựng Đảng thật sự trong sạch, vững mạnh      2.Xây dựng Nhà nước</p> <p><b>Học ngoài lớp:</b> Hoàn thiện bài thuyết trình</p>	Thảo luận nhóm (DIC)  Thi cuối kỳ (FEX)
6	<b>Chương 5</b> <b>TƯ TUỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC</b> <b>ĐẠI ĐOÀN KẾT DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ</b>		<p><b>Dạy:</b></p> <p>I. TƯ TUỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC</p> <p>1.Vai trò của đại đoàn kết dân tộc      2.Lực lượng của khối đại đoàn kết dân tộc      3.Điều kiện để xây dựng khối đại đoàn kết toàn dân tộc      4.Hình thức, nguyên tắc tổ chức của khối đại đoàn kết dân tộc - Mặt trận dân tộc thống nhất      5. Phương thức xây dựng khối đại đoàn kết dân tộc</p> <p><b>Dạy:</b> Châm thuyết trình &amp; phản biện</p> <p><b>Học ở lớp:</b> Thảo luận tại lớp</p> <p>II.TƯ TUỞNG HỒ CHÍ MINH VỀ ĐOÀN KẾT QUỐC TẾ</p> <p>1.Sự cần thiết phải đoàn kết quốc tế      2.Lực lượng đoàn kết quốc tế và hình thức tổ chức      3.Nguyên tắc đoàn kết quốc tế</p> <p>III.VẬN DỤNG TƯ TUỞNG HỒ CHÍ MINH VỀ ĐẠI ĐOÀN KẾT DÂN TỘC VÀ ĐOÀN KẾT QUỐC TẾ TRONG GIAI ĐOẠN HIỆN NAY</p> <p>1.Quán triệt tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế trong hoạch định chủ trương, đường lối của Đảng      2.xây dựng khối đại đoàn kết toàn dân tộc trên nền tảng liên minh công - nông - trí thức dưới sự lãnh đạo của Đảng      3.Đại đoàn kết dân tộc phải kết hợp với đoàn kết quốc tế</p>	

7	<b>Chương 6</b>  TƯ TUỔNG HỒ CHÍ MINH VỀ VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI	<p><b>Dạy:</b></p> <p>I. TƯ TUỔNG HỒ CHÍ MINH VỀ VĂN HÓA</p> <p>1.Một số nhận thức chung về văn hóa và quan niệm giữa văn hóa với các lĩnh vực khác</p> <p>2.Quan điểm của Hồ Chí Minh về vai trò của văn hóa</p> <p>3.Quan điểm của Hồ Chí Minh về xây dựng nền văn hóa mới</p> <p><b>Dạy:</b> Chấm thuyết trình &amp; phản biện</p> <p><b>Học ở lớp:</b> Thảo luận tại lớp</p> <p>II. TƯ TUỔNG HỒ CHÍ MINH VỀ ĐẠO ĐỨC</p> <p>1. Quan điểm về vai trò và sức mạnh của đạo đức cách mạng</p> <p>2.Quan điểm về những chuẩn mực đạo đức cách mạng</p> <p>3.Quan điểm về những nguyên tắc xây dựng đạo đức cách mạng</p> <p>III.TƯ TUỔNG HỒ CHÍ MINH VỀ CON NGƯỜI</p> <p>1.Quan niệm Hồ Chí Minh về con người</p> <p>2.Quan niệm của Hồ Chí Minh về vai trò của con người</p> <p>3.Quan niệm Hồ Chí Minh về xây dựng con người</p> <p>IV.XÂY DỰNG VĂN HÓA, ĐẠO ĐỨC, CON NGƯỜI VIỆT NAM HIỆN NAY THEO TƯ TUỔNG HỒ CHÍ MINH</p> <p>1.Xây dựng và phát triển văn hóa, con người</p> <p>2.Về xây dựng đạo đức cách mạng</p>	
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## 7. Đánh giá môn học

ST T	Mã	Tên	Mô tả	Tỷ Trọng	Hình thức	LO
1	GHW	Thuyết trình nhóm	Thuyết trình nhóm về đề tài đã phân công	150%	Thuyết trình và bản báo cáo nhóm	LO.2, LO.3, LO.4, LO.5, LO.6.
2	Quiz	Bài thi giữa kỳ	Giảng viên cho thi	20%	Trắc nghiệm (đề đóng) hoặc tự luận (đề mở)	LO.2, LO.3.
3	DIC	Thảo luận tại lớp (Discussion in Class)	Điểm thảo luận được tính theo phương pháp tương đối. SV có số lần thảo luận tại lớp nhiều nhất sẽ được điểm tối đa, điểm của các bạn khác được tính dựa theo bạn có số lần thảo luận cao nhất.	15%	Phát biểu/đặt câu hỏi trên lớp hoặc phiếu trả lời trong các nghiên cứu tình huống tại lớp	LO.3, LO.4, LO.5, LO.6.
4	FEX	Thi cuối kỳ	Thi đề chung Đề thi bao quát toàn bộ nội dung môn học	50%	Tự luận (đề mở)	LO.2, LO.3, LO.4, LO.5, LO.6.
			<b>Tổng cộng</b>	<b>100%</b>		

## 8. Tiêu chí đánh giá chuẩn đầu ra môn học

TT	Chuẩn đầu ra	Nội dung	Phương pháp	Tiêu chí đánh giá
LO.1	<ul style="list-style-type: none"> <li>- Hiểu được khái niệm tư tưởng Hồ Chí Minh.</li> <li>- Nắm được đối tượng; phương pháp nghiên cứu tư tưởng Hồ Chí Minh và ý nghĩa học tập môn tư tưởng Hồ Chí Minh.</li> </ul>	Chương 1	Hỏi - Đáp	Công điểm
LO.2	<ul style="list-style-type: none"> <li>- Hiểu rõ cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh.</li> <li>- Nắm được giá trị tư tưởng Hồ Chí Minh đối với cách mạng Việt Nam và thế giới.</li> </ul>	Chương 2	Thi giữa kỳ (Quiz)	Đề thi của GV
LO.3	<ul style="list-style-type: none"> <li>- Nắm rõ nội dung tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội; mối quan hệ giữa độc lập dân tộc và chủ nghĩa xã hội.</li> <li>- Hiểu được sự vận dụng tư tưởng Hồ Chí Minh về độc lập dân tộc và chủ nghĩa xã hội của Đảng Cộng sản Việt Nam và Nhà nước ta.</li> </ul>	Chương 3	Thuyết trình nhóm (GHW) Thi giữa kỳ (Quiz) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Đề thi của GV Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.4	<ul style="list-style-type: none"> <li>- Nắm rõ nội dung tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt nam và Nhà nước của dân, do dân, vì dân.</li> <li>- Hiểu được sự vận dụng của Đảng và Nhà nước ta vào công tác xây dựng Đảng và xây dựng Nhà nước.</li> </ul>	Chương 4	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.5	<ul style="list-style-type: none"> <li>- Nắm được nội dung tư tưởng Hồ Chí Minh về đại đoàn kết toàn dân tộc và đoàn kết quốc tế.</li> <li>- Hiểu được sự vận dụng của Đảng và Nhà nước ta trong việc hoạch định chủ trương, đường lối, chính sách về đại đoàn kết dân tộc và đối ngoại.</li> </ul>	Chương 5	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính
LO.6	<ul style="list-style-type: none"> <li>- Nắm được nội dung tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người.</li> <li>- Vận dụng tư tưởng Hồ Chí Minh về văn hóa, đạo đức và con người trong việc rèn luyện, tu dưỡng bản thân.</li> </ul>	Chương 6	Thuyết trình nhóm (GHW) Thi cuối kỳ (FEX)	Tiêu chí đánh giá thuyết trình nhóm Ngân hàng đề thi của khoa Chính trị - Hành chính

## **9. Một số lưu ý khác:**

- Khi có các thắc mắc liên quan môn học, sinh viên có thể liên lạc với quản lý Bộ môn Hồ Chí Minh học & Lịch sử Đảng và Khoa Chính trị - Hành chính qua email: daotao.spas@vnuhcm.edu.vn
- Quy định về Bài thuyết trình nhóm GHW: Thành lập nhóm: 5 sinh viên/nhóm.
  - + Hạn chót đăng ký đề tài nhóm Quản lý trên forum là Buổi 2.
  - + Tuần 4 thuyết trình theo thứ tự. Lưu ý các nhóm cần có mặt đủ và mang theo tất cả các tài liệu liên quan đến GHW khi đi thuyết trình.
  - + Hình thức nộp bài: Nộp file và biên bản làm việc nhóm qua mail cho GV
- Quy định về đánh giá môn học: theo Quy định về việc giảng dạy và học tập các môn Lý luận chính trị của khoa Chính trị - Hành chính.

*TP. Hồ Chí Minh, ngày 07 tháng 02 năm 2022*

**TRƯỞNG KHOA  
PHÓ TRƯỞNG KHOA**

(Đã kí)

TS. Nguyễn Đình Quốc Cường





**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**Department of Mathematics**

**COURSE SYLLABUS**  
**Course Name: Calculus 1**

Course Code: **MA001IU**

**1. General information**

Course designation	This course equip students with basic concepts of calculus: limits, continuity, differentiation, and integration. Applications of these concepts are extensively discussed.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	4

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	<ol style="list-style-type: none"> <li>1. To provide students with the main ideas and techniques of calculus. These include limits, continuity, differentiation, and integration.</li> <li>2. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences.</li> <li>3. To develop skills in mathematical modelling and problem solving, ability to think logically, and adapt these skills creatively to new situations</li> </ol>								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>           CLO1. Have basic knowledge of limits and derivatives            (Program outcomes: a)             CLO2. Have basic knowledge of definite/indefinite integrals            (Program outcomes: a)         </td></tr> <tr> <td>Skill</td><td>           CLO3. Can compute often used limits, can define and compute derivatives (Program outcomes: a, j)             CLO4. Can compute standard types of integrals. Use integrals in practical situations (Program outcomes: a, j)         </td></tr> <tr> <td>Attitude</td><td>CLO5. Confident when dealing with derivatives and integrals. Comfortable with using derivatives and integrals in practical situations. (Program outcome: j, k)</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have basic knowledge of limits and derivatives (Program outcomes: a)  CLO2. Have basic knowledge of definite/indefinite integrals (Program outcomes: a)	Skill	CLO3. Can compute often used limits, can define and compute derivatives (Program outcomes: a, j)  CLO4. Can compute standard types of integrals. Use integrals in practical situations (Program outcomes: a, j)	Attitude	CLO5. Confident when dealing with derivatives and integrals. Comfortable with using derivatives and integrals in practical situations. (Program outcome: j, k)
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (4 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p>																																															
<table border="1"> <thead> <tr> <th>Topic</th> <th>Weight</th> <th>Level</th> </tr> </thead> <tbody> <tr> <td>Functions and Graphs, Inverse Functions, Exponential and Logarithmic Functions</td><td>1</td><td>I, T</td></tr> <tr> <td>Parametric Curves, Limit. One-sided Limits, Laws of Limit</td><td>1</td><td>I, T</td></tr> <tr> <td>Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem</td><td>1</td><td>T, U</td></tr> <tr> <td>Tangent Lines and Velocity Problems. Rates of Change, Derivative.</td><td>1</td><td>T, U</td></tr> <tr> <td>Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences</td><td>1</td><td>T, U</td></tr> <tr> <td>Implicit Differentiation, Differentiation of Inverse Functions,</td><td>1</td><td>T, U</td></tr> <tr> <td>Logarithmic Differentiation, Linear Approximations. Differentials.</td><td>1</td><td>T, U</td></tr> <tr> <td>Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.</td><td>1</td><td>T, U</td></tr> <tr> <td>The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching</td><td>1</td><td>T, U</td></tr> <tr> <td>Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method</td><td>1</td><td>T, U</td></tr> <tr> <td>Anti-derivatives and Indefinite Integrals, The Definite Integral</td><td>1</td><td>I, T</td></tr> <tr> <td>Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution</td><td>1</td><td>I, T, U</td></tr> <tr> <td>Integration by Parts, Partial Fractions, Numerical Integration,</td><td>1</td><td>T, U</td></tr> <tr> <td>Improper Integrals, Areas between Curves Areas Enclosed by Parametric Curves</td><td>1</td><td>T, U</td></tr> <tr> <td>Volumes, Arc Length, Applications to Engineering, Economics and Science</td><td>1</td><td>T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Functions and Graphs, Inverse Functions, Exponential and Logarithmic Functions	1	I, T	Parametric Curves, Limit. One-sided Limits, Laws of Limit	1	I, T	Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem	1	T, U	Tangent Lines and Velocity Problems. Rates of Change, Derivative.	1	T, U	Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences	1	T, U	Implicit Differentiation, Differentiation of Inverse Functions,	1	T, U	Logarithmic Differentiation, Linear Approximations. Differentials.	1	T, U	Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.	1	T, U	The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching	1	T, U	Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method	1	T, U	Anti-derivatives and Indefinite Integrals, The Definite Integral	1	I, T	Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution	1	I, T, U	Integration by Parts, Partial Fractions, Numerical Integration,	1	T, U	Improper Integrals, Areas between Curves Areas Enclosed by Parametric Curves	1	T, U	Volumes, Arc Length, Applications to Engineering, Economics and Science	1	T, U
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Examination forms	Written examination																																															
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																															
Reading list	J. Stewart, <i>Calculus</i> , Thomson Learning, 7 <sup>th</sup> edition, 2012.																																															

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3									x		
4									x		
5									x	x	

## 3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Functions and Graphs, Inverse Functions, Exponential and Logarithmic Functions.	1,3		Lecture
2	Parametric Curves, Limit. One-sided Limits, Laws of Limits.	1,3	Quiz	Lectures and Quiz
3	Evaluating Limits. The Squeeze Theorem. Continuity. The Intermediate Value Theorem	3, 5	Quiz	Lectures and Quiz
4	The Tangent and Velocity Problems. Rates of Change, The Derivative.	3, 5	HW1	Lectures and HW
5	Higher-Order Derivatives, Rules of Differentiation. Rates of Change in the Natural and Social Sciences	3, 5	Quiz	Lectures and Quiz
6	Implicit Differentiation, Differentiation of Inverse Functions,	3, 5	HW2	Lectures and HW
7	Logarithmic Differentiation, Linear Approximations. Differentials.	3, 5	Quiz	Lectures and Quiz
8	Related Rates, Maxima and Minima. Critical Point, The Mean Value Theorem.	3, 5	HW3	Lectures and HW
<b>Midterm Exam</b>				

<b>9</b>	The First and Second Derivative Test, Concavity. Shapes of Curves, Curve Sketching	2, 4	Quiz	Lectures and Quiz
<b>10</b>	Indeterminate Forms and l'Hôpital's Rules, Maxima and Minima Problems, Newton's Method	2, 4	Quiz	Lectures and Quiz
<b>11</b>	Anti-derivatives and Indefinite Integrals, The Definite Integral	4, 5	HW4	Lectures and HW
<b>12</b>	Properties of the Definite Integral. The Fundamental Theorem of Calculus, Integration by Substitution	2, 4	Quiz	Lectures and Quiz
<b>13</b>	Integration by Parts, Partial Fractions, Numerical Integration,	4, 5	Quiz	Lectures and Quiz
<b>14</b>	Improper Integrals, Areas between Curves  Areas Enclosed by Parametric Curves	2, 4, 5	HW5	Lectures and HW
<b>15</b>	Volumes, Arc Length, Applications to Engineering, Economics and Science	1, 2, 3, 4, 5	Exercises	
<b>Final Exam</b>		1, 2, 3, 4, 5		

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80% Pass		Q3, Q4 70% Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

**5. Date revised: January 12, 2022**

*Ho Chi Minh City, dd/mm/yyyy  
Head/Dean of Department/School  
(Signature)*

*<Full Name>*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Mathematics**

**COURSE SYLLABUS**  
**Course Name: Calculus 2**

Course Code: **MA003IU**

**1. General information**

Course designation	This course is a continuation of Calculus 1. Its aim to equip student with basis concepts of sequence, series, vector functions, functions of several variables, multiple integrals and their applications
Semester(s) in which the course is taught	1, 2
Person responsible for the course	<i>Assoc. Prof. Mai Duc Thanh, Assoc. Prof. Tran Vu Khanh, Dr. Nguyen Minh Quan, Dr. Nguyen Anh Tu, Dr. Ta Quoc Bao.</i>
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	4

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	Calculus 1								
Course objectives	<ol style="list-style-type: none"> <li>1. To provide students with the main ideas and techniques of calculus. These include sequences, series, functions of several variables, optimal problems, multiple integrals, vector calculus.</li> <li>2. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences.</li> <li>3. To develop skills in mathematical modelling and problem solving, ability to think logically, and adapt these skills creatively to new situations</li> </ol>								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>           CLO1. Have basic knowledge of series, functions of several variables, multiple integrals (Program outcomes: a)            CLO2. Have basic knowledge of vector calculus (Program outcomes: a)         </td></tr> <tr> <td>Skill</td><td>           CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j)            CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)         </td></tr> <tr> <td>Attitude</td><td>CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have basic knowledge of series, functions of several variables, multiple integrals (Program outcomes: a) CLO2. Have basic knowledge of vector calculus (Program outcomes: a)	Skill	CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j) CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)	Attitude	CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)
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Skill	CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j) CLO4. Can show the convergence of a sequence and a series and use power series to simplify computation. Can show the optimal problem using partial derivatives, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)								
Attitude	CLO5. Confident when dealing with partial derivatives, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)								

Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (4 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Sequences and Convergence</td><td>1</td><td>I, T</td></tr> <tr> <td>Series</td><td>1</td><td>I, T</td></tr> <tr> <td>Tests for Convergence</td><td>1</td><td>T, U</td></tr> <tr> <td>Power series</td><td>1</td><td>T, U</td></tr> <tr> <td>Representations of Functions as Power series</td><td>1</td><td>T, U</td></tr> <tr> <td>Taylor and Maclaurin series</td><td>1</td><td>T, U</td></tr> <tr> <td>Vector Functions and Space Curves, Limit and continuity of vector functions</td><td>1</td><td>I, T</td></tr> <tr> <td>Derivatives and Integrals of vector functions, Length of space curves</td><td>1</td><td>T, U</td></tr> <tr> <td>Functions of Several Variables, Limits and Continuity</td><td>1</td><td>I,T</td></tr> <tr> <td>Partial Derivatives, Tangent Plane and Linear Approximations</td><td>1</td><td>T, U</td></tr> <tr> <td>Chain Rules, Directional Derivatives and Gradient</td><td>1</td><td>T, U</td></tr> <tr> <td>Maximum and Minimum Values of Functions of two variables</td><td>1</td><td>T, U</td></tr> <tr> <td>Lagrange Multipliers and Applications</td><td>1</td><td>T, U</td></tr> <tr> <td>Double Integrals in Rectangles, Iterated Integrals</td><td>1</td><td>I, T</td></tr> <tr> <td>Double, Triple Integrals in General regions and Applications</td><td>2</td><td>T,U</td></tr> </tbody> </table>	Topic	Weight	Level	Sequences and Convergence	1	I, T	Series	1	I, T	Tests for Convergence	1	T, U	Power series	1	T, U	Representations of Functions as Power series	1	T, U	Taylor and Maclaurin series	1	T, U	Vector Functions and Space Curves, Limit and continuity of vector functions	1	I, T	Derivatives and Integrals of vector functions, Length of space curves	1	T, U	Functions of Several Variables, Limits and Continuity	1	I,T	Partial Derivatives, Tangent Plane and Linear Approximations	1	T, U	Chain Rules, Directional Derivatives and Gradient	1	T, U	Maximum and Minimum Values of Functions of two variables	1	T, U	Lagrange Multipliers and Applications	1	T, U	Double Integrals in Rectangles, Iterated Integrals	1	I, T	Double, Triple Integrals in General regions and Applications	2	T,U
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Reading list	J. Stewart, <i>Calculus</i> , Thomson Learning, 7 <sup>th</sup> edition, 2012.																																																

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3									x		
4									x		
5									x	x	

## 3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Sequences, Series, The Integral Test and Estimates Sums, Thecomparison Tests	2, 4	HW	Lectures and Quiz
2	Alternating Series, Absolute Convergence and the Ratio and Roots Tests, Strategy for Testing Series	2, 4	HW	Lectures and Quiz
3	Power Series, Representations of Functions as Power Series, Taylor & Maclaurin Series, Applications of Taylor Polynomials	4, 5	Quiz	Lectures and Quiz
4	3D Coordinate Systems, Vectors, The Dot Product, The Cross Product, Equations of Lines and Planes, Functions of Surface.	2, 4	HW	Lectures and Quiz
5	Vector Functions and Space Curves, Derivatives and Integrals of Vector Functions, Arc Length, Parametric Surfaces	4, 5	HW	Lectures and Quiz
6	Functions of Several Variables, Limit and Continuity,	2, 4, 5	Quiz	Lectures and Quiz
7	Partial Derivatives, Tangent Planes and Linear Approximations,	3, 5	HW	Lectures and Quiz
8	Chain Rule, Directional Derivatives and Gradient Vectors,	3, 5	HW	Lectures and Quiz
Midterm Exam				

9	Maximun and Minimun Values, Larange Multipliers	2, 4	HW	Lectures and Quiz
10	Double Integrals over Rectangles, Iterated Integrals, Double Integrals over General Regions	2, 4	HW	Lectures and Quiz
11	Double Integrals in Polar Coordinates, Application of Double Integrals.	4, 5	HW	Lectures and Quiz
12	Triple Integrals, Triple Integrals in Cylindrical and Spherical Coordinates. Change of Variables in Multiple Integrals	2, 4	Quiz	Lectures and Quiz
13	Vector Fields, Line Integrals, the Fundamental Theorem for Line Integrals	4, 5	HW	Lectures and Quiz
14	Green's Theorem, Curl and Divergence, Surface Integrals	2, 4, 5	HW	Lectures and Quiz
15	Stokes' Theorem, Divergence Theorem.	1, 2, 3, 4,	Exercises	
Final Exam				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80%Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80%Pass		Q3, Q4 70%Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: January 12, 202

Ho Chi Minh City, dd/mm/yyyy  
**Head/Dean of Department/School**  
*(Signature)*

*<Full Name>*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Mathematics**

**COURSE SYLLABUS**

**Course Name: Calculus 3**

Course Code: **MA023IU**

**1. General information**

Course designation	This course equip students with Complex numbers, complex series, complex functions, complex derivatives; Laplace transform, z-transform, Fourier series, Fourier transform, the inverse transform, transforms of derivatives and integrals, first-order differential equations, second-order differential equations, difference equations, applications to electrical circuits and signal processing.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	4

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	Calculus 1 and Calculus 2								
Course objectives	<ol style="list-style-type: none"> <li>1. Knowledge of complex numbers and series, complex functions, and complex derivatives</li> <li>2. Knowledge of Laplace transforms, z-transforms, Fourier series and Fourier transforms, Fourier spectrum, frequency response, etc</li> <li>3. Mathematical and computational skills needed in solving differential equations and in fields such as electric circuits, communications, signal processing and control, etc</li> <li>4. To develop confidence and fluency in discussing mathematics in English.</li> </ol>								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th> <th>Course learning outcome (CLO)</th> </tr> </thead> <tbody> <tr> <td>Knowledge</td> <td>           CLO1. Have basic knowledge of complex numbers and series, complex functions, and complex derivatives            (Program outcomes: a)             CLO2. Have basic knowledge of Laplace transforms, z-transforms, Fourier series and Fourier transforms, Fourier spectrum, frequency response            (Program outcomes: a)         </td> </tr> <tr> <td>Skill</td> <td>           CLO3 Can do the Fourier and Laplace transform of basic functions in applications.             CLO4. Can solve differential equations and in fields such as electric circuits, communications, signal processing and control, etc (Program outcomes: a, j)         </td> </tr> <tr> <td>Attitude</td> <td>CLO5. To develop confidence and fluency in discussing and reading mathematics in English and to develop a long-life learning            (Program outcome: j, k)</td> </tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Have basic knowledge of complex numbers and series, complex functions, and complex derivatives (Program outcomes: a)  CLO2. Have basic knowledge of Laplace transforms, z-transforms, Fourier series and Fourier transforms, Fourier spectrum, frequency response (Program outcomes: a)	Skill	CLO3 Can do the Fourier and Laplace transform of basic functions in applications.  CLO4. Can solve differential equations and in fields such as electric circuits, communications, signal processing and control, etc (Program outcomes: a, j)	Attitude	CLO5. To develop confidence and fluency in discussing and reading mathematics in English and to develop a long-life learning (Program outcome: j, k)
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Have basic knowledge of complex numbers and series, complex functions, and complex derivatives (Program outcomes: a)  CLO2. Have basic knowledge of Laplace transforms, z-transforms, Fourier series and Fourier transforms, Fourier spectrum, frequency response (Program outcomes: a)								
Skill	CLO3 Can do the Fourier and Laplace transform of basic functions in applications.  CLO4. Can solve differential equations and in fields such as electric circuits, communications, signal processing and control, etc (Program outcomes: a, j)								
Attitude	CLO5. To develop confidence and fluency in discussing and reading mathematics in English and to develop a long-life learning (Program outcome: j, k)								

Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>		
	Weight: lecture session (4 hours)		
	Teaching levels: I (Introduce); T (Teach); U (Utilize)		
	<b>Topic</b>	<b>Weight</b>	<b>Level</b>
	1.1 Introduction	1	I, T
	1.2 The Argand diagram		
	1.3 The arithmetic of complex numbers		
	1.4 Polar form of a complex number		
	1.5 Euler's formula	1	I, T
	1.6 Circular and hyperbolic functions		
	1.7 Logarithm of a complex number		
	1.8 Powers and roots of complex numbers		
	1.9 Complex functions and mappings	1	T, U
	1.10 Complex differentiation. Cauchy-Riemann equations		
	1.11 Conjugate and harmonic functions		
	1.12 Power series. Taylor series	1	T, U
	1.13 Laurent series		
	2.1 Definition and examples	1	T, U
	2.2 Existence of the Laplace transform		
	2.3 Properties of the Laplace transform		
	2.4 The inverse transform		
	2.5 Transforms of derivatives and integrals	1	T, U
	2.6 Differential equations		
	2.7 Engineering applications.		
	2.8 Step functions and Laplace transforms		
	2.9 The second shift theorem	1	T, U
	2.10 Differential equations		
	2.11 Periodic functions		
	2.12 Impulse functions and Laplace transforms		
	2.13 Relationship between Heaviside step and impulse functions	1	T, U
	2.14 Transfer functions. Stability. Impulse response		

	2.15 Initial-and final value-theorems 2.16 Convolution. System response to an arbitrary input 2.17 Engineering applications.		
	3.1 Definition and examples 3.2 Properties of the z transform 3.3 The inverse z transform	1	T, U
	3.4 Discrete-time systems and difference equations 3.5 z transfer functions 3.6 The impulse response. Stability	1	T, U
	3.7 Convolution 3.8 The relationship between Laplace and z transforms 3.9 Engineering applications	1	I, T
	4.1 Periodic functions. The Fourier coefficients 4.2 Functions of period $2\pi$ 4.3 Even and odd functions and harmonics 4.4 Linear property. Convergence of the Fourier series	1	I, T, U
	4.5 Functions of period T 4.6 Functions defined over a finite interval 4.7 Differentiation and integration of Fourier series. 4.8 Coefficients in terms of jumps at discontinuities	1	T, U
	4.9 Engineering applications 4.10 Complex form of Fourier series 4.11 The multiplication theorem and Parseval's theorem	1	T, U
	4.12 Discrete frequency spectra. Power spectrum 4.13 Engineering applications <b>Exercises and Revisions.</b>	1	T, U
Examination forms	Written examination		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>		

<p>Reading list</p> <p>G. James, <i>Advanced Modern Engineering Mathematics</i>, 3<sup>rd</sup> ed., Prentice Hall, 2004. (Main textbook)</p> <p><b>Other textbooks:</b></p> <ol style="list-style-type: none"> <li>1. E. Kreyszig, <i>Advanced Engineering Mathematics</i>, 9<sup>th</sup> ed., John Wiley &amp; Sons, 2006.</li> <li>2. R.C. Drot, J. A. Svoboda, <i>Introduction to Electric Circuits</i>, 6<sup>th</sup> ed., John Wiley &amp; Sons, 2004.</li> <li>3. J.W. Nilsson and S.A. Riedel, <i>Electric Circuits</i>, 7th Ed, Prentice Hall, 2005.</li> <li>4. J.H. McClellan, R.W. Schafer, M.A. Yoder, <i>Signal Processing First</i>, Prentice Hall, 2003.</li> <li>5. A.V. Oppenheim, A.S. Willsky, <i>Signals &amp; Systems</i>, 2<sup>nd</sup> ed., Prentice Hall, 1997.</li> <li>6. B.P. Lathi, <i>Linear Systems and Signals</i>, Oxford University Press, 2005.</li> </ol>
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## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3									x		
4									x		
5									x	x	

## 3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Introduction, The Argand diagram, The arithmetic of complex numbers, Polar form of a complex number	1,3		Lecture
2	Euler's formula, Circular and hyperbolic functions, Logarithm of a complex number, Powers and roots of complex numbers	1,3	Quiz	Lectures and Quiz
3	Complex functions and mappings, Complex differentiation. Cauchy-Riemann equations, Conjugate and harmonic functions	3, 5	Quiz	Lectures and Quiz
4	Power series. Taylor series, Laurent series	3, 5	HW1	Lectures and HW
5	Definition and examples, Existence of the Laplace transform, Properties of the Laplace transform, The inverse transform	3, 5	Quiz	Lectures and Quiz

<b>6</b>	2.5 Transforms of derivatives and integrals 2.6 Differential equations 2.7 Engineering applications. 2.8 Step functions and Laplace transforms	3, 5	HW2	Lectures and HW
<b>7</b>	2.9 The second shift theorem 2.10 Differential equations 2.11 Periodic functions 2.12 Impulse functions and Laplace transforms	3, 5	Quiz	Lectures and Quiz
<b>8</b>	2.13 Relationship between Heaviside step and impulse functions 2.14 Transfer functions. Stability. Impulse response 2.15 Initial-and final value-theorems 2.16 Convolution. System response to an arbitrary input 2.17 Engineering applications.	3, 5	HW3	Lectures and HW
Midterm Exam				
<b>9</b>	3.1 Definition and examples 3.2 Properties of the z transform 3.3 The inverse z transform	2, 4	Quiz	Lectures and Quiz
<b>10</b>	3.4 Discrete-time systems and difference equations 3.5 z transfer functions 3.6 The impulse response. Stability	2, 4	Quiz	Lectures and Quiz
<b>11</b>	3.7 Convolution 3.8 The relationship between Laplace and z transforms 3.9 Engineering applications	4, 5	HW4	Lectures and HW
<b>12</b>	4.1 Periodic functions. The Fourier coefficients 4.2 Functions of period $2\pi$ 4.3 Even and odd functions and harmonics 4.4 Linear property. Convergence of the Fourier series	2, 4	Quiz	Lectures and Quiz

<b>13</b>	4.5 Functions of period T 4.6 Functions defined over a finite interval 4.7 Differentiation and integration of Fourier series. 4.8 Coefficients in terms of jumps at discontinuities	4, 5	Quiz	Lectures and Quiz
<b>14</b>	4.9 Engineering applications 4.10 Complex form of Fourier series 4.11 The multiplication theorem and Parseval's theorem	2, 4, 5	HW5	Lectures and HW
<b>15</b>	4.12 Discrete frequency spectra. Power spectrum 4.13 Engineering applications Revisions	1, 2, 3, 4, 5	Exercises	
<b>Final Exam</b>		1, 2, 3, 4, 5		

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80% Pass		Q3, Q4 70% Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Date revised: January 12, 2022

Ho Chi Minh City, 12/1/2022  
**Head of Department of Mathematics**  
*(Signature)*

*Phạm Hữu Anh Ngọc*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Mathematics**

**COURSE SYLLABUS**  
**Course Name: Differential Equations**

Course Code: **MA024IU**

**1. General information**

Course designation	This course introduces fundamental mathematical methods and analysis in ordinary differential equations and their applications and a short introduction to partial differential equations.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Lectures of Department of Mathematics
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 120 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 60 (lectures) Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	4

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	<p>1. This course introduces the theory of ordinary differential equations. Topics discussed include first-order differential equations, existence and uniqueness theorems, second-order linear equations, higher-order linear equations, systems of equations, non-linear equations.</p> <p>2. The relationship between differential equations and linear algebra is emphasized in this course.</p> <p>3. Applications of differential equations in physics, engineering, biology, and economics are presented.</p> <p>4. This course also gives a very brief introduction to partial differential equations in particular using separation variables to solve heat equation, wave equation, and Laplace equation.</p>								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td> <p>CLO1. Understand the concepts of differential equations and the methods to solve linear first/second differential equations. (Program outcomes: a)</p> <p>CLO2. Understand the method to solve linear <math>n</math>-th order differential equations. Know how to use separation of variable to solve the heat equation, wave equation and Laplace equation (Program outcomes: a)</p> </td></tr> <tr> <td>Skill</td><td> <p>CLO3. Can solve basic first order differential equations, higher order differential equations with constant coefficients and first order systems. (Program outcomes: a, j)</p> <p>CLO4. Can use partial differential equations to model and study real phenomena (Program outcomes: a, j)</p> </td></tr> <tr> <td>Attitude</td><td>CLO5. Confident when applying differential equations to practical situations. (Program outcome: j, k)</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	<p>CLO1. Understand the concepts of differential equations and the methods to solve linear first/second differential equations. (Program outcomes: a)</p> <p>CLO2. Understand the method to solve linear <math>n</math>-th order differential equations. Know how to use separation of variable to solve the heat equation, wave equation and Laplace equation (Program outcomes: a)</p>	Skill	<p>CLO3. Can solve basic first order differential equations, higher order differential equations with constant coefficients and first order systems. (Program outcomes: a, j)</p> <p>CLO4. Can use partial differential equations to model and study real phenomena (Program outcomes: a, j)</p>	Attitude	CLO5. Confident when applying differential equations to practical situations. (Program outcome: j, k)
Competency level	Course learning outcome (CLO)								
Knowledge	<p>CLO1. Understand the concepts of differential equations and the methods to solve linear first/second differential equations. (Program outcomes: a)</p> <p>CLO2. Understand the method to solve linear <math>n</math>-th order differential equations. Know how to use separation of variable to solve the heat equation, wave equation and Laplace equation (Program outcomes: a)</p>								
Skill	<p>CLO3. Can solve basic first order differential equations, higher order differential equations with constant coefficients and first order systems. (Program outcomes: a, j)</p> <p>CLO4. Can use partial differential equations to model and study real phenomena (Program outcomes: a, j)</p>								
Attitude	CLO5. Confident when applying differential equations to practical situations. (Program outcome: j, k)								

Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (4 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td><b>Introduction</b> Some Basic Mathematical Models; Direction Fields Solutions of Differential Equations Classification of Differential Equations</td><td>1</td><td>I, T</td></tr> <tr> <td><b>First-order differential equations</b> Linear Equations Method of Integrating Factors Separable Equations Modeling with First Order Equations</td><td>1</td><td>T, U</td></tr> <tr> <td>Differences Between Linear and Nonlinear Equations Autonomous Equations and Population Dynamics Exact Equations and Integrating Factors</td><td>1</td><td>T, U</td></tr> <tr> <td><b>Linear second-order differential equations</b> Fundamental solution set of homogeneous equations Linear independence and Wronskian Homogeneous linear second-order differential equations with constant coefficients</td><td>2</td><td>T, U</td></tr> <tr> <td>Non-homogeneous equations Method of undermined coefficients Variation of Parameters Mechanical and Electrical Vibrations Forced Vibrations</td><td>2</td><td>T, U</td></tr> <tr> <td><b>Higher Order Linear Equations</b> General Theory of nth Order Linear Equations Homogeneous Equations with Constant Coefficients Method of Undetermined Coefficients Variation of Parameters</td><td>2</td><td>T, U</td></tr> <tr> <td>Basic Theory of Systems of First Order Linear Equations Homogeneous Linear Systems with Constant Coefficients</td><td>2</td><td>T, U</td></tr> <tr> <td>Non-homogeneous systems: Method of undetermined coefficients Variation of parameters</td><td>2</td><td>T, U</td></tr> <tr> <td><b>Partial differential equations</b> Separation of variables Heat conduction in a bar Wave equation, Laplace equation</td><td>2</td><td></td></tr> </tbody> </table>	Topic	Weight	Level	<b>Introduction</b> Some Basic Mathematical Models; Direction Fields Solutions of Differential Equations Classification of Differential Equations	1	I, T	<b>First-order differential equations</b> Linear Equations Method of Integrating Factors Separable Equations Modeling with First Order Equations	1	T, U	Differences Between Linear and Nonlinear Equations Autonomous Equations and Population Dynamics Exact Equations and Integrating Factors	1	T, U	<b>Linear second-order differential equations</b> Fundamental solution set of homogeneous equations Linear independence and Wronskian Homogeneous linear second-order differential equations with constant coefficients	2	T, U	Non-homogeneous equations Method of undermined coefficients Variation of Parameters Mechanical and Electrical Vibrations Forced Vibrations	2	T, U	<b>Higher Order Linear Equations</b> General Theory of nth Order Linear Equations Homogeneous Equations with Constant Coefficients Method of Undetermined Coefficients Variation of Parameters	2	T, U	Basic Theory of Systems of First Order Linear Equations Homogeneous Linear Systems with Constant Coefficients	2	T, U	Non-homogeneous systems: Method of undetermined coefficients Variation of parameters	2	T, U	<b>Partial differential equations</b> Separation of variables Heat conduction in a bar Wave equation, Laplace equation	2	
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Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	<ol style="list-style-type: none"> <li>1. W.E. Boyce, R.C. DiPrima, Elementary Differential Equations and Boundary Value problems, 8<sup>th</sup> Edition, John Wiley &amp; Sons.</li> <li>2. P. Hartman, Ordinary differential equations, SIAM Classics in applied mathematics 38, 2<sup>nd</sup> edition, Birkhauser, 1982</li> <li>3. J.K. Hale, Ordinary differential equations, 2nd ed., Robert E. Krieger Publishing Co., Inc., Huntington, New York, 1980.</li> </ol>

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO										
	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3									x		
4									x		
5									x	x	

## 3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	<b>Introduction</b> <ul style="list-style-type: none"> <li>- Some Basic Mathematical Models, Direction Fields.</li> <li>- Classification of Differential Equations</li> <li>- Solutions to Some Differential Equations</li> </ul> <b>First-order differential equations</b> <ul style="list-style-type: none"> <li>- Linear Equations</li> <li>- Method of Integrating Factors</li> </ul>	1,3		Lectures
2	<ul style="list-style-type: none"> <li>- Separable Equations</li> <li>- Modeling with First Order Equations</li> <li>- Differences Between Linear Nonlinear Equations</li> </ul>	1,3	Quiz	Lectures and Quiz

<b>3</b>	Autonomous Equations and Population Dynamics  Exact Equations and Integrating Factors	3, 5	Quiz	Lectures and Quiz
<b>4</b>	<b>Second order linear differential equations</b>  Solutions of Linear Homogeneous Equations  The Wronskian and linear independence.	3, 5	HW1	Lectures and HW
<b>5</b>	Homogeneous Equations with Constant Coefficients  Complex Roots of the Characteristic Equation, Repeated Roots	3, 5	Quiz	Lectures and Quiz
<b>6</b>	Nonhomogeneous Equations: Method of Undetermined Coefficients	3, 5	HW2	Lectures and HW
<b>7</b>	Variation of Parameters  Mechanical and Electrical Vibrations  Forced Vibrations	3, 5	Quiz	Lectures and Quiz
<b>8</b>	Review	3, 5	HW3	Lectures and HW
<b>Midterm Exam</b>				
<b>9</b>	<b>Higher Order Linear Equations</b>  General Theory of $n$ -th Order Linear Equations	2, 4	Quiz	Lectures and Quiz
<b>10</b>	Homogeneous Equations with Constant Coefficients	2, 4	Quiz	Lectures and Quiz
<b>11</b>	Non-homogeneous equations:  Method of undetermined coefficients  Variation of parameters	4, 5	HW4	Lectures and HW
<b>12</b>	<b>Linear systems of first-order differential equations</b>  Review of Linear Algebra, Basic Theory of Systems of First Order Linear Equations	2, 4	Quiz	Lectures and Quiz
<b>13</b>	Homogeneous Linear Systems with Constant Coefficients, Complex Eigenvalues and Repeated	4, 5	Quiz	Lectures and Quiz

	Eigenvalues			
<b>14</b>	Method of undetermined coefficients Variation of parameters Review of Fourier Series	2, 4, 5	HW5	Lectures and HW
<b>15</b>	Separation of Variables. Heat Conduction Problems, Wave Equations, Laplace's Equations	1, 2, 3, 4, 5	Exercises	
<b>Final Exam</b>		1, 2, 3, 4, 5		

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80% Pass		Q3, Q4 70% Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Date revised: January 12, 2022

Ho Chi Minh City, dd/mm/yyyy  
**Head/Dean of Department/School**  
(Signature)

*<Full Name>*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Mathematics**

**COURSE SYLLABUS**

**Course Name: Probability, Statistics and Random Process**

Course Code: **MA026IU**

**1. General information**

Course designation	<i>The course is aimed to provide the beginning students in engineering with the simple concepts and techniques of probabilistic and statistics models and stochastic processes.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Dr. Ta Quoc Bao Dr. Pham Hai Ha
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours <sup>1</sup> : 90
Credit points	3
Required and recommended prerequisites for joining the course	Calculus 1 and Calculus 2

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	Students will be provided with skills of using data from a variety of sources, be introduced to contemporary computing and database environments, such as R/Python, and be exposed to case studies from outside the classroom. Through this unit, students will become acquainted with the challenges of contemporary data science and gain an appreciation of the foundational skills necessary to turn data into information.																											
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td><b>CLO1.</b> Identify basic concept such as sample space, events, probability, conditional probability, independence; distribution and mean, variance of random variables; important statistics including sample mean, sample proportion, sample variance and sample standard deviation.</td></tr> <tr> <td>Skill</td><td><b>CLO2.</b> Compute probability of simple and complicated events with probability rules; Evaluate probability, mean and variance of random variables and function of random variables. <b>CLO3.</b> Conduct estimate parameter(s) and hypothesis testing procedure from sample data. <b>CLO4.</b> Calculate transition probability, unconditional distribution, classify state and find stationary distribution of a Markov chain.</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	<b>CLO1.</b> Identify basic concept such as sample space, events, probability, conditional probability, independence; distribution and mean, variance of random variables; important statistics including sample mean, sample proportion, sample variance and sample standard deviation.	Skill	<b>CLO2.</b> Compute probability of simple and complicated events with probability rules; Evaluate probability, mean and variance of random variables and function of random variables. <b>CLO3.</b> Conduct estimate parameter(s) and hypothesis testing procedure from sample data. <b>CLO4.</b> Calculate transition probability, unconditional distribution, classify state and find stationary distribution of a Markov chain.																					
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Introduction to Probability</td><td>1</td><td>I, T</td></tr> <tr> <td>Counting techniques</td><td>1</td><td>T, U</td></tr> <tr> <td>Conditional probability and probability rules</td><td>2</td><td>T, U</td></tr> <tr> <td>Random variables and mathematical expectation</td><td>4</td><td>T, U</td></tr> <tr> <td>Markov chain</td><td>2</td><td>T, U</td></tr> <tr> <td>Introduction to Statistics and Statistics Descriptive</td><td>1</td><td>I, T</td></tr> <tr> <td>Parameter estimation</td><td>2</td><td>T, U</td></tr> <tr> <td>Hypothesis testing</td><td>2</td><td>T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Introduction to Probability	1	I, T	Counting techniques	1	T, U	Conditional probability and probability rules	2	T, U	Random variables and mathematical expectation	4	T, U	Markov chain	2	T, U	Introduction to Statistics and Statistics Descriptive	1	I, T	Parameter estimation	2	T, U	Hypothesis testing	2	T, U
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Examination forms	Written examination																											

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.  Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	1. R. Walpole et al, <i>Probability and Statistics for Engineers and Scientists</i> , 9 <sup>th</sup> edition. 2. S. Ross, <i>Introduction to Probability Models</i> , 9 <sup>th</sup> edition. 3. S. Ross, <i>Introduction Probability and Statistics for Engineers and Scientist</i> , 3 <sup>th</sup> edition

## 2. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to probability	1	Quiz1	Lecture, HW	[1].1 [2].2 [3].3
2	Counting techniques	2		Lecture, HW	[1].2
3 - 4	Calculating probability	2	Quiz2	Lecture HW	[1].2 [2].1 [3].3
5-6	Random variables	2	Quiz3	Lecture, HW	[1].3, [2].2, 3 [3].4
7	Mean – Variance – Covariance	2	HW1	Lecture, Discussion, HW	[1].4 [2].2 [3].4
8	Special distributions	2		Lecture, HW	[1].5, 6 [2].2 [3].5
9	Midterm				
10 -11	Markov chain	4	HW2	Lecture, Discussion, HW	[2].4
12	Descriptive statistics	1		Lecture, Discussion, HW	[1]. 1. [3].2
13 - 14	Parameter estimation	3	Quiz4	Lecture, Discussion, HW	[1]. 9 [3].7
15 - 16	Hypothesis testing	3	Quiz5	Lecture, Discussion, HW	[1]. 10 [3]. 8
17	Final exam				

### 3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1 70%Pass	Qz2, Qz3 70%Pass	Qz3, Qz4 70% Pass	
Homework exercises (10%)	HW1 70%Pass			HW2 70%Pass
Midterm exam (30%)	Part I 70%Pass	Part II 70%Pass		
Final exam (50%)			Part II 70%Pass	Part I 70%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

### 4. Date revised: January 12, 2022

*Ho Chi Minh City, dd/mm/yyyy*  
*Head/Dean of Department/School*  
*(Signature)*

*<Full Name>*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Physics**

**COURSE SYLLABUS**

**Course Name: Physics 1 (General Mechanics)**

Course Code: **PH013IU**

**1. General information**

Course designation	<i>This subject will provide an introduction to mechanics including: concepts and principles of kinetics, dynamics, energetics of motion of a particle and a rigid body.</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. Prof. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	None

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>This course will provide students with:</p> <ol style="list-style-type: none"> <li>1. The basic knowledge of general Mechanics Physics</li> <li>2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques</li> <li>3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment</li> <li>4. Confidence and fluency in discussing physics in English.</li> </ol>																								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. An ability to understand of basic knowledge of law of conservations and dynamics of rigid body. CLO2. An ability to analysis and design a problem in science and engineering</td></tr> <tr> <td>Skill</td><td>CLO3. An ability in applying knowledge of physics</td></tr> <tr> <td>Attitude</td><td>CLO4. An ability to communicate effectively in writing manner</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. An ability to understand of basic knowledge of law of conservations and dynamics of rigid body. CLO2. An ability to analysis and design a problem in science and engineering	Skill	CLO3. An ability in applying knowledge of physics	Attitude	CLO4. An ability to communicate effectively in writing manner																
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (2 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Chapter 1: Bases of Kinematics</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 2: The Law of Motion</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 3: Work and Mechanical Energy</td><td>3</td><td>I, T</td></tr> <tr> <td>Chapter 4: Linear Momentum and Collisions</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 5: Rotation of a Rigid Object About a Fixed Axis</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 6: Equilibrium and Elasticity</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 7: Universal Gravitation</td><td>2</td><td>I, T</td></tr> </tbody> </table>	Topic	Weight	Level	Chapter 1: Bases of Kinematics	2	I, T	Chapter 2: The Law of Motion	2	I, T	Chapter 3: Work and Mechanical Energy	3	I, T	Chapter 4: Linear Momentum and Collisions	2	I, T	Chapter 5: Rotation of a Rigid Object About a Fixed Axis	2	I, T	Chapter 6: Equilibrium and Elasticity	2	I, T	Chapter 7: Universal Gravitation	2	I, T
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Chapter 6: Equilibrium and Elasticity	2	I, T																							
Chapter 7: Universal Gravitation	2	I, T																							
Examination forms	Short-answer questions																								
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																								

Reading list	[1] Halliday D., Resnick R. and Walker, J. (2011) <i>Fundamentals of Physics</i> , 9 <sup>th</sup> edition, John Willey and Sons, Inc. [2] Alonso M. and Finn E.J. (1992) <i>Physics</i> , Addison-Wesley Publishing Company. [3] Hecht, E. (2000) <i>Physics: Calculus</i> , 2 <sup>nd</sup> edition, Brooks/Cole. [4] Faughn/Serway (2006) <i>Serway's College Physics</i> , Thomson Brooks/Cole.
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## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO									
	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	Chapter 1: Bases of Kinematics	1	Quiz1	Lecture, Discussion, Inclass-Quiz	[1].0. [2].1.
3-4	Chapter 2: The Law of Motion	1	HW1	Lecture, Inclass, HW	[1].9.
5-6-7	Chapter 3: Work and Mechanical Energy	3	Quiz2	Lecture, Discussion, Inclass-Quiz	[2].2.
8-9	Chapter 4: Linear Momentum and Collisions	2	HW2, Quiz3	Lecture, Group work, HW	[1]. 2, 4 [2]. 2
10	Midterm				
11-12	Chapter 5: Rotation of a Rigid Object About a Fixed Axis	3	HW3	Lecture, Group work, HW	[2]. 4. [1]. 18.
13-14	Chapter 6: Equilibrium and Elasticity	3		Lecture, Group work	[3]. 10
15-16	Chapter 7: Universal Gravitation	3	HW4	Lecture, Discussion, HW	[2]. 8
17	Final exam				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50% Pass	Qz2, Qz4/ As.P2 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50% Pass
Midterm exam (30%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass
Final exam (40%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			Comments
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work		15	
Analysis and discussion demonstrate good subject mastery		30	
Summary and conclusions appropriate and complete		5	
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions		5	
Content clearly and logically organized, good transitions		5	
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax		10	
Clear and easy to read		10	
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>		100	

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.

2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
		4	3	2
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone		Benchmark
		4	3	2

<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

## 6. Date revised: January 12, 2022

Ho Chi Minh City, dd/mm/yyyy  
**Head/Dean of Department/School**  
*(Signature)*

*Phan Bảo Ngọc*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Physics**

**COURSE SYLLABUS**

**Course Name: Physics 2 (Fluid Mechanics and Thermal Physics)**

Course Code: **PH014IU**

**1. General information**

Course designation	<i>This subject will provide a basic knowledge of fluid mechanics; macroscopic description of gases; heat and the first law of thermodynamics; heat engines and the second law of thermodynamics; microscopic description of gases and the kinetic theory of gases.</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. Prof. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	None

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>This course will provide students with:</p> <ol style="list-style-type: none"> <li>1. The basic knowledge of Fluid Mechanics and Thermal Physics</li> <li>2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques</li> <li>3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment</li> <li>4. Confidence and fluency in discussing physics in English.</li> </ol>															
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics. CLO2. An ability to analysis and design a problem in science and engineering</td></tr> <tr> <td>Skill</td><td>CLO3. An ability in applying knowledge of physics</td></tr> <tr> <td>Attitude</td><td>CLO4. An ability to communicate effectively in writing manner</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics. CLO2. An ability to analysis and design a problem in science and engineering	Skill	CLO3. An ability in applying knowledge of physics	Attitude	CLO4. An ability to communicate effectively in writing manner							
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Skill	CLO3. An ability in applying knowledge of physics															
Attitude	CLO4. An ability to communicate effectively in writing manner															
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (2 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Chapter 1: Fluid Mechanics</td><td>2</td><td>I, T</td></tr> <tr> <td>Chapter 2: Temperature, Heat, and the First Law of Thermodynamics</td><td>4</td><td>I, T</td></tr> <tr> <td>Chapter 3: The Kinetic Theory of Gases</td><td>5</td><td>I, T</td></tr> <tr> <td>Chapter 4: Entropy and the Second Law of Thermodynamics</td><td>4</td><td>I, T</td></tr> </tbody> </table>	Topic	Weight	Level	Chapter 1: Fluid Mechanics	2	I, T	Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	4	I, T	Chapter 3: The Kinetic Theory of Gases	5	I, T	Chapter 4: Entropy and the Second Law of Thermodynamics	4	I, T
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Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	4	I, T														
Chapter 3: The Kinetic Theory of Gases	5	I, T														
Chapter 4: Entropy and the Second Law of Thermodynamics	4	I, T														
Examination forms	Short-answer questions															
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>															

Reading list	[1] Halliday D., Resnick R. and Walker, J. (2011) <i>Fundamentals of Physics</i> , 9 <sup>th</sup> edition, John Willey and Sons, Inc. [2] Alonso M. and Finn E.J. (1992) <i>Physics</i> , Addison-Wesley Publishing Company. [3] Hecht, E. (2000) <i>Physics: Calculus</i> , 2 <sup>nd</sup> edition, Brooks/Cole. [4] Faughn/Serway (2006) <i>Serway's College Physics</i> , Thomson Brooks/Cole.
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## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO									
	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	Chapter 1: Fluid Mechanics	1, 2	Quiz1	Lecture, Discussion, Inclass-Quiz	[1].0. [2].1.
3-6	Chapter 2: Temperature, Heat, and the First Law of Thermodynamics	1, 2	HW1	Lecture, Inclass, HW	[1].9.
7-9	Chapter 3: The Kinetic Theory of Gases (part 1)	3, 4	Quiz2	Lecture, Group work	[2].2.
10	Midterm				
11-12	Chapter 3: The Kinetic Theory of Gases (part 2)	3, 4	Quiz3, HW2	Lecture, Group work, HW	[2]. 4. [1]. 18.
13-16	Chapter 4: Entropy and the Second Law of Thermodynamics	3, 4	HW3, HW4	Lecture, Group work	[3]. 10
17	Final exam				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50% Pass	Qz2, Qz4/ As.P2 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50% Pass
Midterm exam (30%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass
Final exam (40%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.

2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

*Source: Association of American Colleges and Universities*

**Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>			<b>Benchmark</b>
		<b>4</b>	<b>3</b>	<b>2</b>	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

*Source: Association of American Colleges and Universities*

**6. Date revised: January 12, 2022**

*Ho Chi Minh City, dd/mm/yyyy  
 Head/Dean of Department/School  
 (Signature)*

*Phan Bảo Ngọc*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Physics**

**COURSE SYLLABUS**

**Course Name: Physics 3 (Electricity and Magnetism)**

Course Code: **PH015IU**

**1. General information**

Course designation	<i>This subject will provide a basic knowledge of electricity and magnetism.</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. Prof. Phan Bảo Ngọc
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 45 Private study including examination preparation, specified in hours <sup>1</sup> : 90
Credit points	3
Required and recommended prerequisites for joining the course	Physics 1

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>This course will provide students with:</p> <ol style="list-style-type: none"> <li>1. The basic knowledge of electricity and magnetism such as electric charge, electric potential, magnetic fields, electromagnetic waves, etc.</li> <li>2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques.</li> <li>3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment.</li> <li>4. Confidence and fluency in discussing physics in English.</li> </ol>																								
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. An ability to understand basic knowledge of electricity and magnetism such as electric charge, electric potential, magnetic fields, electromagnetic waves. CLO2. Examine problem solving in engineering environment</td></tr> <tr> <td>Skill</td><td>CLO3. Understand and acquire skills needed to use physical laws governing real process and to solve them in the engineering environment</td></tr> <tr> <td>Attitude</td><td>CLO4. Develop confidence and fluency in discussing physics in English</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. An ability to understand basic knowledge of electricity and magnetism such as electric charge, electric potential, magnetic fields, electromagnetic waves. CLO2. Examine problem solving in engineering environment	Skill	CLO3. Understand and acquire skills needed to use physical laws governing real process and to solve them in the engineering environment	Attitude	CLO4. Develop confidence and fluency in discussing physics in English																
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Chapter 1: Electric Fields</td><td>3</td><td>I, T, U</td></tr> <tr> <td>Chapter 2: Electric Potential and Capacitance</td><td>2</td><td>I, T, U</td></tr> <tr> <td>Chapter 3: Current and Resistance. Direct Current Circuits</td><td>3</td><td>I, T, U</td></tr> <tr> <td>Chapter 4: Magnetism</td><td>2</td><td>I, T, U</td></tr> <tr> <td>Chapter 5: Electromagnetic Induction</td><td>2</td><td>I, T, U</td></tr> <tr> <td>Chapter 6: Electromagnetic Oscillations and Alternating Current</td><td>2</td><td>I, T, U</td></tr> <tr> <td>Chapter 7: Maxwell's Equation and Electromagnetic Waves</td><td>1</td><td>I, T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Chapter 1: Electric Fields	3	I, T, U	Chapter 2: Electric Potential and Capacitance	2	I, T, U	Chapter 3: Current and Resistance. Direct Current Circuits	3	I, T, U	Chapter 4: Magnetism	2	I, T, U	Chapter 5: Electromagnetic Induction	2	I, T, U	Chapter 6: Electromagnetic Oscillations and Alternating Current	2	I, T, U	Chapter 7: Maxwell's Equation and Electromagnetic Waves	1	I, T, U
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Chapter 7: Maxwell's Equation and Electromagnetic Waves	1	I, T, U																							
Examination forms	Short-answer questions																								

Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>
Reading list	<p>[1] Halliday D., Resnick R. and Walker, J. (2011) <i>Fundamentals of Physics</i>, 9<sup>th</sup> edition, John Wiley and Sons, Inc.</p> <p>[2] Alonso M. and Finn E.J. (1992) <i>Physics</i>, Addison-Wesley Publishing Company.</p> <p>[3] Hecht, E. (2000) <i>Physics: Calculus</i>, 2<sup>nd</sup> edition, Brooks/Cole.</p> <p>[4] Faughn/Serway (2006) <i>Serway's College Physics</i>, Thomson Brooks/Cole.</p>

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-10) is shown in the following table:

CLO	PLO									
	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-3	Chapter 1: Electric Fields	1, 2, 3, 4	Quiz 1/ Assignment Midterm exam	Lecture, Discussion	[1].0. [2].1.
4-5	Chapter 2: Electric Potential and Capacitance	1, 2, 3, 4	Quiz 2/ Assignment Midterm exam	Lecture, Discussion	[1].9.
6-7	Chapter 3: Current and Resistance. Direct Current Circuits	1, 2, 3, 4	Assignment Midterm exam	Lecture, Discussion	[2].2.
8	Chapter 4: Magnetism (Part 1)	1, 2, 3, 4	Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.
9-10	Midterm				
11-12	Chapter 4: Magnetism (Part 2)	1, 2, 3, 4	Quiz 3/ Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.
13-14	Chapter 5: Electromagnetic Induction	1, 2, 3, 4	Quiz 4/ Assignment Final exam	Lecture, Discussion	[3]. 10

<b>Week</b>	<b>Topic</b>	<b>CLO</b>	<b>Assessments</b>	<b>Learning activities</b>	<b>Resources</b>
15-16	Chapter 6: Electromagnetic Oscillations and Alternating Current	1, 2, 3, 4	Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.
17	Chapter 7: Maxwell's Equation and Electromagnetic Waves	1, 2, 3, 4	Final exam	Lecture	[3]. 10
18-19	Final exam				

#### 4. Assessment plan

<b>Assessment Type</b>	<b>CLO1</b>	<b>CLO2</b>	<b>CLO3</b>	<b>CLO4</b>
Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50% Pass	Qz2, Qz4/ As.P2 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50% Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50% Pass
Midterm exam (30%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass
Final exam (40%)	Q1, Q2, Q3 50% Pass	Q4, Q5 50% Pass	Q3, Q5 50% Pass	Q3, Q5 50% Pass

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

<b>Grading checklist for Written Reports</b>			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
<b>Technical content (60%)</b>		<b>Max.</b>	<b>Score</b>
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work		15	
Analysis and discussion demonstrate good subject mastery		30	
Summary and conclusions appropriate and complete		5	
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions		5	
Content clearly and logically organized, good transitions		5	
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax		10	
Clear and easy to read		10	
<b>Quality of Layout and Graphics (10%)</b>		10	
<b>TOTAL SCORE</b>		100	

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.
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*Source: Association of American Colleges and Universities*

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b> <b>4</b>	<b>Milestone</b>		<b>Benchmark</b> <b>1</b>
		<b>3</b>	<b>2</b>	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

#### **6. Date revised: January 12, 2022**

*Ho Chi Minh City, dd/mm/yyyy*

*Head/Dean of Department/School*

*(Signature)*

*Phan Bảo Ngọc*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of Physics**

**COURSE SYLLABUS**

**Course Name: Physics 3 Laboratory  
(Electricity and magnetism laboratory)**

Course Code: **PH016IU**

**1. General information**

Course designation	<i>This course provides students with basic knowledge of electricity and magnetism in laboratory, consists of: Ohm's law, LRC circuit, RC circuit, LR circuit, magnetic fields of coils....</i>
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Msc. Lê Thị Quế Msc. Trịnh Thanh Thủy
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 60 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): lecture: 30 Private study including examination preparation, specified in hours <sup>1</sup> : 30
Credit points	1
Required and recommended prerequisites for joining the course	Physics 3 (PH015IU)

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>This course will provide students with:</p> <ol style="list-style-type: none"> <li>1. The basic concepts in electricity and magnetism. Have laboratory experiences.</li> <li>2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques</li> <li>3. Skill to present scientific report in writing, and better understand the relations between theory and experiment.</li> <li>4. Confidence and fluency in discussing physics in English.</li> </ol>																											
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th><b>Competency level</b></th><th><b>Course learning outcome (CLO)</b></th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. Understand the basic concepts in electricity and magnetism.</td></tr> <tr> <td>Skill</td><td>CLO2. Approach and solve problems in Electricity and magnetism experiments CLO3. Write scientific report, have understanding the relations between theory and experiment</td></tr> <tr> <td>Attitude</td><td>CLO4. An ability to communicate effectively in writing English manner</td></tr> </tbody> </table>	<b>Competency level</b>	<b>Course learning outcome (CLO)</b>	Knowledge	CLO1. Understand the basic concepts in electricity and magnetism.	Skill	CLO2. Approach and solve problems in Electricity and magnetism experiments CLO3. Write scientific report, have understanding the relations between theory and experiment	Attitude	CLO4. An ability to communicate effectively in writing English manner																			
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: experimental session (4 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th><b>Topic</b></th><th><b>Weight</b></th><th><b>Level</b></th></tr> </thead> <tbody> <tr> <td>Ohm's law</td><td>1</td><td>T, U</td></tr> <tr> <td>Resistances in Circuits</td><td>1</td><td>T, U</td></tr> <tr> <td>LCR Circuits</td><td>1</td><td>T, U</td></tr> <tr> <td>Kirchhoff's laws</td><td>1</td><td>T, U</td></tr> <tr> <td>RC circuit</td><td>1</td><td>T, U</td></tr> <tr> <td>LR circuit</td><td>1</td><td>T, U</td></tr> <tr> <td>Magnetic fields of coils</td><td>1</td><td>T, U</td></tr> <tr> <td>The e/m experiment</td><td>1</td><td>T, U</td></tr> </tbody> </table>	<b>Topic</b>	<b>Weight</b>	<b>Level</b>	Ohm's law	1	T, U	Resistances in Circuits	1	T, U	LCR Circuits	1	T, U	Kirchhoff's laws	1	T, U	RC circuit	1	T, U	LR circuit	1	T, U	Magnetic fields of coils	1	T, U	The e/m experiment	1	T, U
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Examination forms	Short-answer questions, taking experiment, write report																											
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																											
Reading list	<p>[1] Halliday D., Resnick R. and Walker, J. (2011) <i>Fundamentals of Physics</i>, 9<sup>th</sup> edition, John Wiley and Sons, Inc.</p> <p>[2] Labguide</p>																											

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	PLO									
	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Ohm's law	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
2	Resistances in Circuits	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
3	LRC Circuits	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
4	Kirchhoff's laws	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
5	RC circuit	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
6	LR circuit	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
7	Magnetic fields of coils	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
8	The e/m experiment	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
9	Final exam				

## 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Prelab (20%)	Prelab1-8 60%Pass			Prelab1-8 60%Pass
Lab report (30%)	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass
Attendance (20%)				
Final exam (30%)	Part I.1 50%Pass	Part I.2 50%Pass	Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

## 5. Rubrics (optional)

### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Max.	Score
Date: .....	Evaluator: .....		Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### Critical thinking value rubric for evaluating questions in exams:

Explanation of issues	Capstone	Milestone		Benchmark
	4	3	2	1
	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

## **6. Date revised: January 12, 2022**

*Ho Chi Minh City, dd/mm/yyyy*

***Head/Dean of Department/School***

*(Signature)*

*Phan Bảo Ngọc*



**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Physics 4 (Wave and Modern Physics)**

**Course Code: PH012**

**1. General information**

1. Course designation	
Semester(s) in which the course is taught	3,5,6,7,8
Person responsible for the course	Do Xuan Hoi , Dr.
Language	English
Relation to curriculum	Compulsory / elective / specialisation Names of other study programmes with which the module is shared
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Private study including examination preparation, specified in hours: Student responsibility: Students are expected to spend at least 8 hours per week for self – studying. This time should be made up of reading, working on exercises and problems and group assignment.
Credit points	Number of credits : 2 Lecture: 2 Laboratory: 0
Required and recommended prerequisites for joining the course	Physics 1 (general mechanics)
Course objectives	This course provides students with basic knowledge of Wave and Modern Physics

Course learning outcomes	<p>CLO 1. Construct the basic knowledge of Wave and Modern Physics</p> <p>CLO 2. Solve problems in engineering environment by applying both theoretical and experimental techniques</p> <p>CLO 3. Understand and acquire skills needed to use physical laws governing real process and to solve them in the engineering environment</p> <p>CLO 4. Develop confidence and fluency in discussing physics in English.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td></td></tr> <tr> <td>Skill</td><td></td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge		Skill		Attitude											
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Chapter 1: Vibration and Mechanical Wave</td><td></td><td></td></tr> <tr> <td>Chapter 2: Properties of Light</td><td></td><td></td></tr> <tr> <td>Chapter 3 Introduction to Quantum Physics</td><td></td><td></td></tr> <tr> <td>Chapter 4: Atomic Physics</td><td></td><td></td></tr> <tr> <td>Chapter 5: Relativity and Nuclear Physics</td><td></td><td></td></tr> </tbody> </table>	Topic	Weight	Level	Chapter 1: Vibration and Mechanical Wave			Chapter 2: Properties of Light			Chapter 3 Introduction to Quantum Physics			Chapter 4: Atomic Physics			Chapter 5: Relativity and Nuclear Physics		
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Examination forms	Multiple-choice questions, short-answer questions																		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																		
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## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	1	2	3	4	5	6
1	✓					
2	✓					
3	✓					

4	✓					
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### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Chapter 1: Vibration and Mechanical Wave				
2	<b>Midterm</b>				
3	Chapter 2: Properties of Light				
4	Chapter 3 Introduction to Quantum Physics				
5	Chapter 4: Atomic Physics				
6	Chapter 5: Relativity and Nuclear Physics				
7	<b>Final exam</b>				

### 4. Assessment plan

#### Assessment Type

Assessment Type	CLO1	CLO2	CLO3	CLO4
Homework/ Assignment (20%)			50%	50%
Midterm examination (20%)	100%			
Final examination (60%)		100%	50%	50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- 
- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
<b>Technical content (60%)</b>		Max.	Score
Abstract clearly identifies purpose and summarizes principal content		10	

Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.

<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**  
 (Signature)



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Biotechnology**

**COURSE SYLLABUS**

**Course Name: Chemistry for Engineers**

Course Code: **CHE011IU**

**1. General information**

Course designation	<i>This one-semester course is designed for students who are pursuing an engineering degree (e.g., information technology, biotechnology, civil, biomedical, electronic, and telecommunication engineering) and chemistry-related ones (e.g., applied chemistry and chemical engineering). The course will introduce the basic principles of chemistry and connect those principles to issues in the engineering profession. The related lab work is not included in this course.</i>
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	Assoc.Prof. Dr. Huynh Kim Lam Dr. Vũ Bảo Khánh Dr. Phùng Thanh Khoa
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, project, and seminar (optional).
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 hrs for lectures Private study including examination preparation, specified in hours <sup>1</sup> : 90 hrs
Credit points	3
Required and recommended prerequisites for joining the course	None

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>Upon successful completion of this course, the students should be able to demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>● The role of chemistry for engineers</li> <li>● Measurements in chemistry</li> <li>● Matter and state of matter</li> <li>● Structure of atoms, molecules and ions</li> <li>● Periodicity</li> <li>● Chemical bonds</li> <li>● Intermolecular forces, liquid and solid</li> <li>● Gases, liquids, solids and their properties</li> <li>● Types and rates of chemical reactions</li> <li>● Chemical equilibrium</li> <li>● Electrolytes, acid-base, <math>pH</math>, buffer</li> <li>● Thermochemistry and thermodynamics</li> </ul>																																																
Course learning outcomes	<p><b>CLO1:</b> Be able to apply mathematics and science knowledge to solve chemistry-related problems and explain many aspects of everyday life using chemistry concepts.</p> <p><b>CLO2:</b> Be able to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.</p> <p><b>CLO3:</b> Be able to acquire and apply new knowledge as needed, using appropriate learning strategies.</p>																																																
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Introduction to General Chemistry for Engineers</td><td>0.2</td><td>I, T</td></tr> <tr> <td>Introduction to Matter</td><td>0.3</td><td>I, T</td></tr> <tr> <td>Measurements in Chemistry</td><td>0.5</td><td>I, T</td></tr> <tr> <td>Atoms, Molecules and Ions</td><td>1</td><td>I, T</td></tr> <tr> <td>Periodicity</td><td>1</td><td>I, T</td></tr> <tr> <td>Chemical Bonds</td><td>2</td><td>I, T</td></tr> <tr> <td>Intermolecular Forces</td><td>1</td><td>I, T</td></tr> <tr> <td>Gases and Their Properties</td><td>0.5</td><td>I, T</td></tr> <tr> <td>Solutions and Their Properties</td><td>0.5</td><td>I, T</td></tr> <tr> <td>Solids and Their Properties</td><td>0.5</td><td>I, T</td></tr> <tr> <td>Chemical Reactions</td><td>0.5</td><td>I, T</td></tr> <tr> <td>Chemical Kinetics</td><td>1</td><td>I, T</td></tr> <tr> <td>Chemical Equilibrium</td><td>1</td><td>I, T</td></tr> <tr> <td>Electrolytes, Acid- Base, pH and Buffer</td><td>2</td><td>I, T</td></tr> <tr> <td>Thermochemistry and Thermodynamics</td><td>2</td><td>I, T</td></tr> </tbody> </table>	Topic	Weight	Level	Introduction to General Chemistry for Engineers	0.2	I, T	Introduction to Matter	0.3	I, T	Measurements in Chemistry	0.5	I, T	Atoms, Molecules and Ions	1	I, T	Periodicity	1	I, T	Chemical Bonds	2	I, T	Intermolecular Forces	1	I, T	Gases and Their Properties	0.5	I, T	Solutions and Their Properties	0.5	I, T	Solids and Their Properties	0.5	I, T	Chemical Reactions	0.5	I, T	Chemical Kinetics	1	I, T	Chemical Equilibrium	1	I, T	Electrolytes, Acid- Base, pH and Buffer	2	I, T	Thermochemistry and Thermodynamics	2	I, T
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Electrolytes, Acid- Base, pH and Buffer	2	I, T																																															
Thermochemistry and Thermodynamics	2	I, T																																															
Examination forms	Multiple-choice questions, written test																																																

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] "Chemistry: A Molecular Approach" by Nivaldo J. Tro (2 <sup>nd</sup> Ed., 2008). Pearson. [2] "General Chemistry" by Darrell Ebbing and Steven D. Gammon (9th Ed., 2010). Brooks/Cole, USA. [3] "Chemistry for Engineers – An Applied Approach" by Mary Jane Shultz (2007). Houghton Mifflin. [4] "Chemistry, Principles and Reactions" by Masterton and Hurley (6th Ed., 2009). Cengage learning, USA.

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (PLO) (1-8) is shown in the following table:

CLO	PLO							
	1	2	3	4	5	6	7	8
1	x							
2							x	
3		x						

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to General Chemistry for Engineers Introduction to Matter Measurements in Chemistry	1		- Lecture - Class discussion
2	Atoms, Molecules and Ions	1,7	Homework/ Quiz	- Lecture - Class discussion
3	Periodicity	1,7	Homework/ Quiz	- Lecture - Class discussion
4, 5	Chemical Bonds	1,7	Homework/ Quiz	- Lecture - Class discussion
6	Intermolecular Forces	2,7	Homework/ Quiz	- Lecture - Class discussion
7	Gases and Their Properties Solutions and Their Properties	2,7	Homework/ Quiz	- Lecture - Class discussion
8	Solids and Their Properties Chemical Reactions	1,2,7	Homework/ Quiz	- Lecture - Class discussion
9-10	Midterm			
11, 12	Chemical Kinetics and Chemical Equilibrium	1,2,7	Homework/ Quiz	- Lecture - Class discussion
13, 14	Electrolytes, Acid-Base, pH and Buffer	1,2,7	Homework/ Quiz	- Lecture - Class discussion
15, 16	Thermochemistry and Thermodynamics	1,2,7	Homework/ Quiz	- Lecture - Class discussion
17	Revision	1,2,7	Homework/Quiz	- Class discussion
18-20	Final exam			

#### **4. Assessment plan**

<b>Assessment Type</b>	<b>CLO1</b>	<b>CLO2</b>	<b>CLO3</b>
In-class exercises/homework/quizzes (30%)	Qz1, 2, 3, 4, 5 50%Pass	Qz1, 2, 3, 4, 5 50%Pass	Homework 50%Pass
Midterm exam (30%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass
Final exam (40%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

#### **5. Date revised: August 10, 2022**

*Ho Chi Minh City, dd/mm/yyyy  
Head/Dean of Department/School  
(Signature)*

*<Full Name>*



**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Biotechnology**

**COURSE SYLLABUS**

**Course Name: Chemistry Laboratory**

Course Code: **CH012IU**

**1. General information**

Course designation	This one-semester course is designed for engineering students those who are pursuing a nonchemistry engineering degree such as information technology, bio-technology, civil, biomedical, electronic and telecommunication engineering. The course will introduce students to basic laboratory safety, techniques and apparatus, and complement the information gained in lecture. Prior to each lab, students must read the lab manual about the experiment and complete a prelaboratory report. All students must complete mandatory safety training to participate in the course, which will be provided at the first day of the class. Students are expected to come to each lab on time and be prepared to carry out the day's tasks.
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab, Lecture
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 70 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 25h for lab, 5h for lecture Private study including examination preparation, specified in hours <sup>1</sup> : 40
Credit points	1

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None																		
Course objectives	To introduce students to general chemistry laboratory and to provide students with a firm foundation in chemistry laboratory for careers in science and engineering																		
Course learning outcomes	<p>Upon the successful completion of this course students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1: Applying chemical concepts to draw logical conclusions about the applicability of data to real world problems.</td></tr> <tr> <td>Skill</td><td>CLO2. Being able to perform lab-work: perform experiment, analyze data, answer questions, make conclusion, research assignments, report writing. CLO3: Using collected data to calculate physical or chemical quantities to the experiment being performed.</td></tr> <tr> <td>Attitude</td><td>CLO4: Developing teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting.</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1: Applying chemical concepts to draw logical conclusions about the applicability of data to real world problems.	Skill	CLO2. Being able to perform lab-work: perform experiment, analyze data, answer questions, make conclusion, research assignments, report writing. CLO3: Using collected data to calculate physical or chemical quantities to the experiment being performed.	Attitude	CLO4: Developing teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting.										
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Attitude	CLO4: Developing teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting.																		
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (5 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Chemical Reactions</td><td>1</td><td>T, U</td></tr> <tr> <td>pH and buffers</td><td>1</td><td>T, U</td></tr> <tr> <td>Redox titration</td><td>1</td><td>T, U</td></tr> <tr> <td>Chemical Equilibrium</td><td>1</td><td>T, U</td></tr> <tr> <td>Factors affecting reaction rate</td><td>1</td><td>T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Chemical Reactions	1	T, U	pH and buffers	1	T, U	Redox titration	1	T, U	Chemical Equilibrium	1	T, U	Factors affecting reaction rate	1	T, U
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pH and buffers	1	T, U																	
Redox titration	1	T, U																	
Chemical Equilibrium	1	T, U																	
Factors affecting reaction rate	1	T, U																	
Final evaluation	Multiple choice questions																		
Study and examination requirements	<p>Attendance: An attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																		
Reading list	[1] Lab manual for chemistry laboratory (internal use only)																		

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-8) is shown in the following table:

CLO	PLO							
	1	2	3	4	5	6	7	8
1		x						
2							x	
3				x				
4					x			

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Orientations		Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
2	Chemical Reactions	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
3	pH and buffers	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
4	Redox titration	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
5	Chemical Equilibrium	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
6	Factors affecting reaction rate	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	

## 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/pre-lab (10%)		Prelab 1, 2, 3, 4, 5 50% Pass	Prelab 1, 2, 3, 4, 5 50% Pass	
Lab report (60%)	Report 1, 2, 3, 4, 5 50% Pass			
Final exam (30%)	Q1 50% Pass	Q2 50% Pass	Q3 50% Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

## 5. Rubrics (optional)

### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
			Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content			
Introduction demonstrates thorough knowledge of relevant background and prior work			
Analysis and discussion demonstrate good subject mastery			
Summary and conclusions appropriate and complete			
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions			
Content clearly and logically organized, good transitions			
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax			
Clear and easy to read			
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>			

### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

## 6. Date revised: August 10, 2022

	<p><i>Ho Chi Minh City, dd/mm/yyyy  Head/Dean of Department/School  (Signature)</i></p> <p style="color: #4682B4; text-align: center;"><i>&lt;Full Name&gt;</i></p>
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**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Engineering Ethics and Professional Skills**

**Course Code: PE020**

**1. General information**

Course designation	
Semester(s) in which the course is taught	5,7
Person responsible for the course	Huynh Kim Lam, Dr.
Language	English
Relation to curriculum	Compulsory / elective / specialisation Names of other study programmes with which the module is shared
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Private study including examination preparation, specified in hours: Student responsibility: Students are expected to spend at least 8 hours per week for self – studying. This time should be made up of reading, working on exercises and problems and group assignment.
Credit points	Number of credits : 3 Lecture: 3 Laboratory: 0
Required and recommended prerequisites for joining the course	
Course objectives	This course is designed to introduce engineering students to the concepts, theory and practice of engineering ethics. It will allow students to explore the relationship between ethics and engineering and

	<p>apply classical moral theory and decision making to engineering issues encountered in academic and professional careers. Our society places a great deal of responsibility on its professionals and requires that they conduct themselves in a manner fitting to the place of prominence accorded to them by the community. Studying and understanding professional ethics is as much a part of your development as an engineer as is the study of higher order mathematics. You must be able to broaden your mind and be open to society's ever changing fact that you may not always agree; therefore, we will be working in teams on majority of the character. It is important that you learn to share ideas and concepts regardless of the assignments in this course.</p>																																				
Course learning outcomes	<p>CLO 1. Understanding of intellectual property, copyright, and fair use of copyrighted materials and research data, and follows behaviour consistent with academic integrity and social responsibility.  CLO 2. Be able to integrate professional ethics and equity to issues encountered during engineering practice.  CLO 3. Be able to analyze social, environment, legal aspects, safety and sustainability issues of engineering activities.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td></td></tr> <tr> <td>Skill</td><td></td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge		Skill		Attitude																													
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	Internet ethics		
	Privacy Issues and Intellectual Property Rights		
	Environmental ethics Sustainable engineering		
	Globalization and intern Cultural considerations		
	Final exam		
Examination forms	Multiple-choice questions, short-answer questions		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>		
Reading list			

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to engineering professionalism and ethics				
2	Role of Professional Societies				
3	Academic & Research Ethics				
4	Engineers in Society				
5	Philosophical ethics: Descriptive and prescriptive claims, Relativism theory				
6	Philosophical ethics: Utilitarian theory, Kantian theory				
7	The important if intention truth in action and words				
8	Midterm				

9	Midterm exam				
10	Leadership in engineering and society				
11	Engineer at the Workplace and Organizations				
12	Commitment to Safety				
13	Internet ethics				
14	Privacy Issues and Intellectual Property Rights				
15	Environmental ethics Sustainable engineering				
16	Globalization and intern Cultural considerations				
17	Final exam				
18	<b>Final exam</b>				

#### 4. Assessment plan

##### Assessment Type

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- 
- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.[←](#)

##### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Max.	Score
Date: .....	Evaluator: .....	Comments	
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		

<b>Presentation (20%)</b>				
Correct spelling, grammar, and syntax		10		
Clear and easy to read		10		
<b>Quality of Layout and Graphics (10%)</b>		10		
<b>TOTAL SCORE</b>		100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
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Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
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*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022

**Dean of School of Computer Science and Engineering**  
(Signature)



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of English**

**COURSE SYLLABUS**

**Course Name: Listening AE1 (Listening & Note-takingg)**

**Course Code: EN008IU**

**1. General information**

Course designation	<i>The course is designed to prepare students for effective listening and note-taking skills, so that they can pursue the courses in their majors without considerable difficulty. The course is therefore lecture-based in that the teaching and learning procedure is built up on lectures on a variety of topics such as business, science, and humanities.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	Students must fulfil ONE of the following requirements to attend this course: <ul style="list-style-type: none"><li>• hold TOEFL iBT certificate with score <math>\geq 61</math></li><li>• hold IELTS certificate with score <math>\geq 5.5</math></li><li>• complete IE2 course</li></ul>

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>There are a number of objectives embedded in various teaching activities in Listening AE1 course:</p> <p>Pre-listening activities: aim to activate students' current knowledge of the topic, and to provide them with lecture language and effective strategies in listening and note-taking to prepare themselves for the coming lecture. These activities include reading (this can be done before class meetings), discussing and reviewing what they have learned from the reading.</p> <p>While-listening and post-listening activities: aim to enable students to put their newly activated knowledge and acquired strategies into work by taking notes on the lecture, using the outline given by the teacher or prepared by themselves. They are later on asked to assess their understanding based on their notes and discuss them with their classmates. Finally, as an optional activity, depending on time and students' needs, students are asked to summarize the lecture.</p> <p>Follow-up activities: students are required to discuss the lecture topic and to prepare arguments for or against the topic in the debate. The purpose is to enhance students' comprehension of the lecture, and to allow them to put their acquired academic language into practice, and to experience the atmosphere of a university lecture class.</p>								
Course learning outcomes	<p>Upon the successful completion of this course, students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>           CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes.            CLO2. Improve their specialized knowledge of academic lectures         </td></tr> <tr> <td>Skill</td><td>           CLO3. Respond to academic lectures with appropriate strategies            CLO4. Communicate effectively with their classmates and professors.         </td></tr> <tr> <td>Attitude</td><td>CLO5. Respond to academic lectures with confidence</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes. CLO2. Improve their specialized knowledge of academic lectures	Skill	CLO3. Respond to academic lectures with appropriate strategies CLO4. Communicate effectively with their classmates and professors.	Attitude	CLO5. Respond to academic lectures with confidence
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Skill	CLO3. Respond to academic lectures with appropriate strategies CLO4. Communicate effectively with their classmates and professors.								
Attitude	CLO5. Respond to academic lectures with confidence								

Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (2 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Orientation &amp; Introduction of strategies and techniques in note-taking</td><td>2</td><td>I, T, U</td></tr> <tr> <td>Chapter 1: New Trends in Marketing Research</td><td>3</td><td>T, U</td></tr> <tr> <td>Chapter 2: Business Ethics</td><td>3</td><td>T, U</td></tr> <tr> <td>Chapter 3: Trends in Children's Media Use</td><td>2</td><td>T, U</td></tr> <tr> <td>Chapter 4: The Changing Music Industry</td><td>2</td><td>T, U</td></tr> <tr> <td>Chapter 5: The Placebo Effect</td><td>2</td><td>T, U</td></tr> <tr> <td>Midterm Sample Test &amp; Review</td><td>2</td><td>T, U</td></tr> <tr> <td>Chapter 6: Intelligent Machines</td><td>3</td><td>T, U</td></tr> <tr> <td>Chapter 7: Sibling Relationships</td><td>3</td><td>T, U</td></tr> <tr> <td>Chapter 8: Multiple Intelligences</td><td>3</td><td>T, U</td></tr> <tr> <td>Chapter 9: The Art of Graffiti</td><td>3</td><td>T, U</td></tr> <tr> <td>Final Sample Test &amp; Review</td><td>2</td><td>T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Orientation & Introduction of strategies and techniques in note-taking	2	I, T, U	Chapter 1: New Trends in Marketing Research	3	T, U	Chapter 2: Business Ethics	3	T, U	Chapter 3: Trends in Children's Media Use	2	T, U	Chapter 4: The Changing Music Industry	2	T, U	Chapter 5: The Placebo Effect	2	T, U	Midterm Sample Test & Review	2	T, U	Chapter 6: Intelligent Machines	3	T, U	Chapter 7: Sibling Relationships	3	T, U	Chapter 8: Multiple Intelligences	3	T, U	Chapter 9: The Art of Graffiti	3	T, U	Final Sample Test & Review	2	T, U
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Final Sample Test & Review	2	T, U																																						
Examination forms	Paper and pen tests: Correct the mistakes, Fill in the blanks, Write short answers, Write a summary paragraph.																																							
Study and examination requirements	<p><i>Attendance</i>  Regular on-time attendance in this course is expected. It is compulsory that students attend atleast 80% of the course to be eligible for the final examination.</p> <p><i>Missed tests</i>  Students are not allowed to miss any of the tests (both on-going assessment and final test). There are very few exceptions. (Only with extremely reasonable excuses, e.g. certified paper from doctors, may students re-take the tests.)</p> <p><i>Class behavior</i>  Students are supposed to:  prepare thoroughly for each class in accordance with the syllabus and complete all assignments upon the instructor's request  participate fully and constructively in all class activities (and discussions if any)  display appropriate courtesy to all involved in the class  provide constructive feedback to faculty members regarding their performance</p>																																							
Reading list	<p>[1] Frazie, L., &amp; Leeming, S. (2013). <i>Lecture ready 3</i>. Oxford: Oxford University Press. References:</p> <p>[2] Frazie, L., &amp; Leeming, S. (2013). <i>Lecture ready 1, 2</i>. Oxford: Oxford University Press.</p>																																							

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1						
2						
3						
4						

## 3. Planned learning activities and teaching methods

WEEK	P.	Chapter	Listening oriented activities	Speaking oriented activities
WEEK 1	2	ORIENTATION		
WEEK 2	2	<b>Chapter 1</b> <b>New Trends in Marketing Research</b>	Recognizing topic introducing and lectureplan presenting expressions Organizing ideas by outlining	Expressing ideas during a discussion
WEEK 3	2	<b>Chapter 2</b> <b>Business Ethics</b>	Recognizing transition expressions Using symbols and abbreviations	Asking for clarification and elaboration during a discussion
WEEK 4	2	REVIEW		
WEEK 5	2	<b>Chapter 3</b> <b>Trends in Children's Media Use</b>	Recognizing generalization and support expressions	Giving opinions and asking for opinions during a discussion
WEEK 6	2	<b>Chapter 4</b> <b>The Changing Music Industry</b>	Recognizing expressions for clarification or emphasis Organizing notes by using a split-page format	Expressing interest and asking for elaboration during a discussion
WEEK 7	2	<b>Chapter 5</b> <b>The Placebo Effect</b>	Recognizing cause and effect expressions Noting causes and effects	Agreeing and disagreeing during a discussion
WEEK 8	2	Sample test correction WRAP-UP AND REVIEW		

MID-TERM EXAMINATION				
<b>WEEK 9</b>	2	<b><u>Chapter 6</u></b> <b>Intelligent Machines</b>	Recognizing expressions used to predict causes and effects  Using arrows to show the relationship between causes and effects	Learning to compromise and reach a consensus during a discussion
<b>WEEK 10</b>	2	REVIEW		
<b>WEEK 11</b>	2	<b><u>Chapter 7</u></b> <b>Sibling Relationships</b>	Recognizing expressions of comparison and contrast  Noting comparison and contrast	Expanding on ideas during a discussion
<b>WEEK 12</b>	2	<b><u>Chapter 8</u></b> <b>Multiple Intelligences</b>	Recognizing non-verbal signals indicating important information  Representing information in list form	Keeping the discussion on topic
<b>WEEK 13</b>	2	REVIEW		
<b>WEEK 14</b>	2	<b><u>Chapter 9</u></b> <b>The Art of Graffiti</b>	Recognizing expressions of definition Reviewing and practicing all note taking strategies	Indicating to others when preparing to speak or pausing to collect thoughts
<b>WEEK 15</b>	2	WRAP-UP AND REVIEW		
FINAL EXAMINATION				

#### **4. Assessment plan**

<b>Assessment Type</b>	<b>CLO1</b>	<b>CLO2</b>	<b>CLO3</b>	<b>CLO4</b>	<b>CLO5</b>
<b>On-going assessment (30%)</b> (participation, individual work, group work, assignments, etc.)	80% Pass	80% Pass	80% Pass	80% Pass	80% Pass
<b>Midterm exam (30%)</b>	80% Pass		80% Pass		
<b>Final exam (40%)</b>	80% Pass		80% Pass		

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

#### **5. Rubrics (optional)**

**Date revised: 15 August, 2022**

*Ho Chi Minh City, 15 August 2022*

***Head of Department***

*(Signature)*

*Nguyễn Huy Cường*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of English**

**COURSE SYLLABUS**

**Course Name: Writing AE1 (Academic Writing)**

Course Code: **EN007IU**

**1. General information**

Course designation	<i>This course provides students with comprehensive instructions and practice in essay writing, including transforming ideas into different functions of writing such as process, cause-effect, comparison-contrast, and argumentative essays.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	Students must fulfil ONE of the following requirements to attend this course: <ul style="list-style-type: none"><li>• hold TOEFL iBT certificate with score <math>\geq 61</math></li><li>• hold IELTS certificate with score <math>\geq 5.5</math></li><li>• have completed IE2 course</li></ul>
Course objectives	Throughout the whole course, students are required to read university-level texts to develop the ability to read critically and to respond accurately, coherently and academically in writing. Through providing them with crucial writing skills such as brainstorming, paraphrasing, idea developing, revising, and editing, this course prepares the students for research paper writing in the next level of AE2 writing.

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course learning outcomes	Upon the successful completion of this course, students will be able to:																														
	<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																													
	Knowledge	CLO1. Understand and follow different steps in the writing process to produce a complete essay CLO2. Employ different methods to improve their writing such as peer feedback and teacher comments																													
	Skill	CLO3. Read critically, analyze and annotate an academic text CLO4. Use different functions of writing to successfully communicate their purposes to the audience (describe a process, discuss the causes and effects, compare and contrast, make arguments, paraphrase and summarize)																													
Content	Attitude																														
	CLO5. Reason around ethical issues in writing academic essays and avoid committing plagiarism																														
	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>																														
	Weight: lecture session (2 hours)																														
	Teaching levels: I (Introduce); T (Teach); U (Utilize)																														
	<table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>The process of Academic Writing</td><td>1</td><td>I, T, U</td></tr> <tr> <td>Using Outside Sources</td><td>3</td><td>T, U</td></tr> <tr> <td>From Paragraph to Essay</td><td>4</td><td>T, U</td></tr> <tr> <td>Process Essays</td><td>4</td><td>T, U</td></tr> <tr> <td>Cause/Effect Essays</td><td>4</td><td>T, U</td></tr> <tr> <td>Comparison/ Contrast Essays</td><td>4</td><td>T, U</td></tr> <tr> <td>Argumentative Essays</td><td>6</td><td>T, U</td></tr> <tr> <td>Summarizing</td><td>2</td><td>U</td></tr> <tr> <td>Review &amp; Correction</td><td>2</td><td>U</td></tr> </tbody> </table>		Topic	Weight	Level	The process of Academic Writing	1	I, T, U	Using Outside Sources	3	T, U	From Paragraph to Essay	4	T, U	Process Essays	4	T, U	Cause/Effect Essays	4	T, U	Comparison/ Contrast Essays	4	T, U	Argumentative Essays	6	T, U	Summarizing	2	U	Review & Correction	2
Topic	Weight	Level																													
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Process Essays	4	T, U																													
Cause/Effect Essays	4	T, U																													
Comparison/ Contrast Essays	4	T, U																													
Argumentative Essays	6	T, U																													
Summarizing	2	U																													
Review & Correction	2	U																													
Essay writing																															
<p><i>Attendance</i> Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination.</p>																															
<p><i>Missed Tests</i> Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination.</p>																															

	<p><i>Class Behaviors</i></p> <p>Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE1 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below:</p> <ul style="list-style-type: none"> <li>- Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request.</li> <li>- Participate fully and constructively in all course activities and discussions (if any).</li> <li>- Display appropriate courtesy to all involved in the class.</li> <li>- Provide constructive feedback to faculty members regarding their performance.</li> </ul> <p><i>Plagiarism</i></p> <p>Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination.</p> <p><i>Writing Center (Room 509)</i></p> <p>Students are encouraged to visit the Writing Center to schedule an appointment for additional help with essay writing.</p>
Reading list	<p>[1] Oshima, A., &amp; Hogue, A. (2017). <i>Longman Academic Writing Series, Level 4: Essays</i> (5<sup>th</sup> ed.). New Jersey, NJ: Pearson Longman.</p> <p>[2] Oshima, A., &amp; Hogue, A. (2006). <i>Longman Academic Writing Series, Level 4: Essays</i> (4<sup>th</sup> ed.). New Jersey, NJ: Pearson Longman.</p>

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1						
2						
3						
4						

## 3. Planned learning activities and teaching methods

Week	Coursebook		Homework
	Chapter	Pages	
1	<b>The process of Academic Writing</b> Step 1: Creating (Prewriting) Step 2: Planning (Outlining) Step 3: Writing Step 4: Polishing  <b>Using Outside Sources</b> Paraphrasing Plagiarism and how to avoid plagiarism	[2] pp. 265-279  [1] pp. 58-65	<ul style="list-style-type: none"> <li>Do revising &amp; editing exercises</li> <li>Read pp. [1] pp. 66-72</li> </ul>
2	<b>Using Outside Sources (Cont'd)</b> Strategies for writing a successful summary	[1] pp. 58 - 72	<ul style="list-style-type: none"> <li>Do paraphrasing exercises</li> <li>Read [1] pp.74-100. Read, take notes and write the summary of ONE of the following articles:               <ul style="list-style-type: none"> <li>The Challenge of Many Languages (p. 280)</li> <li>Nice by Nature? (p. 281)</li> <li>Marital Exchanges (pp. 283-4)</li> <li>Why We Should Send a Manned Mission to Mars (pp. 286-7)</li> <li>Let's Not Go to Mars (pp. 288-9)</li> </ul> </li> </ul>
3 & 4	<b>Review/ Correction:</b> Lecturer gives feedback to one or two students' writings in class. <b>From Paragraph to Essay</b> The introductory paragraph: <ul style="list-style-type: none"> <li>General statements &amp; Introductory techniques</li> <li>Thesis statements &amp; Logical division of ideas</li> </ul> Body paragraphs: <ul style="list-style-type: none"> <li>Topic sentences</li> </ul> The concluding paragraph: <ul style="list-style-type: none"> <li>Restatement</li> <li>Final thoughts</li> </ul> Outlines of essays	[1] pp. 74 – 100	<ul style="list-style-type: none"> <li>Read pp. 101-15</li> <li>Do exercises on:               <ul style="list-style-type: none"> <li>Writing thesis statements</li> <li>Writing topic sentences from the thesis statement provided</li> <li>Writing restatements</li> </ul> </li> </ul>

5	<p><b>Process Essays</b></p> <p>Introduction</p> <p>Analyzing the models</p> <p>Thesis statements for process essays</p> <p>Transitional signals</p> <p><b>Write together:</b></p> <p>Writing from a diagram (p.115)</p>	[1] pp. 101 - 115	<ul style="list-style-type: none"> <li>• Write a short essay (150-200 words) describing how hydroelectric power is generated (or a topic of the lecturer's choice)</li> </ul>
6	<p><b>Process Essays (Cont'd) Review/ Correction:</b> Lecturer gives feedback to one or two students' writings in class.</p> <p><b>In-class Assignment:</b></p> <p>Write a process essay about one of these topics or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• How to cook a favorite food</li> <li>• How to do a favorite hobby</li> <li>• How to succeed in your major area or professional field</li> <li>• How to accomplish an academic task (register for classes, apply for a scholarship, pass an exam, etc.)</li> </ul>	[1] pp. 101 - 115	<ul style="list-style-type: none"> <li>• Read [1] pp. 116-132</li> </ul>
7	<p><b>Cause/ Effect Essays</b></p> <p>Introduction</p> <p>Analyzing the models</p> <p>Organization</p> <p>Signal words and phrases</p> <p><b>Write together:</b></p> <p>Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• The cause of obesity</li> <li>• The effects of involvement in sports on young children</li> <li>• The causes of stress in college students</li> <li>• The effects of regular reading on students' lives</li> </ul>	[1] pp. 116 - 132	<ul style="list-style-type: none"> <li>• Practice 4, 5,6 /pp. 127-9</li> <li>• Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: <ul style="list-style-type: none"> <li>○ The cause of obesity</li> <li>○ The effects of involvement in sports on young children</li> <li>○ The causes of stress in college students</li> <li>○ The effects of regular reading on students' lives</li> </ul> </li> </ul>

8	<p><b>Cause/ Effect Essays (Cont'd)</b></p> <p><b>Review/ Correction:</b> Lecturer gives feedback to one or two students' writings in class.</p> <p><b>In-class Writing:</b></p> <p>Write the introduction, ONE body paragraph and the conclusion on one of the two topics left (except for the ones that has been worked on in class and assigned as homework) or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• The cause of obesity</li> <li>• The effects of involvement in sports on young children</li> <li>• The causes of stress in college students</li> </ul> <p>The effects of regular reading on students' lives</p>		<ul style="list-style-type: none"> <li>• Give peer-feedback using the rubric provided</li> </ul>
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#### MID-TERM EXAMINATION

9	<p><b>Comparison/ Contrast Essays</b></p> <p>Introduction Analyzing the modelsOrganization:</p> <ul style="list-style-type: none"> <li>• Points of comparison</li> <li>• Point-by-point organization</li> <li>• Block organization Comparison and Contrast signalwords</li> </ul> <p><b>Write together:</b></p> <p>Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• Compare and contrast the relationship between parents and children in two different cultures.</li> <li>• Compare and contrast the university culture in two different countries.</li> <li>• Compare and contrast the culture of a small town and a big city.</li> </ul>	<p>[1] pp. 133 - 151</p>	<ul style="list-style-type: none"> <li>• Practice 3, 4, 6, 7/pp.142-6</li> <li>• Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: <ul style="list-style-type: none"> <li>○ Compare and contrast the relationship between parents and children in two different cultures.</li> <li>○ Compare and contrast the university culture in two different countries.</li> <li>○ Compare and contrast the culture of a small town and a big city.</li> </ul> </li> </ul>
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10	<p><b>Comparison/ Contrast Essays (Cont'd)</b></p> <p><b>Review/ Correction:</b> Lecturer gives feedback to one or two students' writings in class.</p> <p><b>In-class Assignment:</b></p> <p>Write a compare and contrast essay on the topic left or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• Compare and contrast the relationship between parents and children in two different cultures</li> <li>• Compare and contrast the university cultures in two different countries</li> <li>• Compare and contrast the cultures of a small town and a big city</li> </ul>	[1] pp. 133 - 151	<ul style="list-style-type: none"> <li>• Read [1] pp. 152-168</li> </ul>
11 & 12	<p><b>Argumentative Essays</b></p> <p>Introduction</p> <p>Analyzing the model</p>	[1] pp. 152-168	<ul style="list-style-type: none"> <li>• Write an argumentative essay (300 – 350 words) on ONE of the following topics or a topic</li> </ul>
	<p>Organization: Block vs. Point-by-point pattern</p> <p>The elements of an argumentative essay:</p> <ul style="list-style-type: none"> <li>• An explanation of the issue</li> <li>• A clear thesis statement</li> <li>• A summary of the opposing arguments</li> <li>• Rebuttals to the opposing arguments</li> <li>• Your own arguments</li> </ul> <p>The introductory paragraph:</p> <p>Thesis Statement</p> <p>Statistics as support</p> <p><b>Write together:</b></p> <p>Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• Can same-sex parenting negatively influence a child's mentality?</li> <li>• Do famous artists have an innate talent, or do they put in great effort to improve their skills?</li> <li>• Is homework helpful?</li> </ul>		<p>of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>○ Can same-sex parenting negatively influence a child's mentality?</li> <li>○ Do famous artists have an innate talent, or do they put in great effort to improve their skills?</li> <li>○ Is homework helpful?</li> </ul>

13	<p><b>Argumentative Essays (Cont'd)</b></p> <p><b>Review/ Correction:</b> Lecturer gives feedback to one or two students' writings in class.</p> <p><b>In-class Writing:</b></p> <p>Write an argumentative essay on the topic left or a topic of the lecturer's choice:</p> <ul style="list-style-type: none"> <li>• Can same-sex parenting negatively influence a child's mentality?</li> <li>• Do famous artists have an innate talent, or do they put in great effort to improve their skills?</li> <li>• Is homework helpful?</li> </ul>		<ul style="list-style-type: none"> <li>• Give peer-feedback using the rubric provided</li> </ul>
14	Review & Practice: Summarizing		Sample final test
15	<p><b>Review/Correction:</b> Lecturer gives feedback to one or two students' argumentative essays +sample final test in class.</p> <p>Lecturer has students check their own assignment scores.</p>		
<b>FINAL EXAMINATION</b>			

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Homework completion (10%)	80% Pass	80% Pass	80% Pass		
Week 6: In-class writing assignment: Process essay (10%)				80% Pass	
Week 10: In-class writing assignment: Compare & Contrast essay (10%)				80% Pass	
Midterm exam (30%)	80% Pass			80% Pass	80% Pass
Final exam (40%)				80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Midterm exam rubrics (100 points)

##### TASK 1: Write 3 topic sentences and the restatement from a thesis statement: 40 points

Parts/ Points	Answers/ Criteria	CLO
<b>Topic sentence 1</b> 10 pts	○ The topic sentence introduces the topic and the controlling idea (1), starting with a transition signal*.	CLO 1
<b>Topic sentence 2</b> 10 pts	○ The topic sentence introduces the topic and the controlling idea (2), starting with a transition signal*.	CLO 1
<b>Topic sentence 3</b> 10 pts	○ The topic sentence introduces the topic and the controlling idea (3), starting with a transition signal*.	CLO 1
<b>Restatement</b> 10 pts	○ The 3 subtopics are well paraphrased: different words and structures while the meaning kept the same.	CLO 1

##### Notes:

\*The students are supposed to use a variety of connecting devices (single word, phrase, clause, or sentence) to show their flexibility and expertise in writing.

##### TASK 2: Write a Cause/Effect essay: 60 points

Answers/ Criteria	Parts/ Points	CLO
<b>Language use and Mechanics</b>  A wide variety of sentence patterns and vocabulary are presented correctly. Language used for <i>Cause-Effect Essay</i> is good and Meaning is clear. Spelling, capitalization, punctuation are correct.	10	CLO 1,4

<b>Content</b> The essay fulfills the requirements of the assignment & the topic is fully addressed. (15)  The essay is interesting to read and originally written by the student. (5)	<b>20</b>	CLO 1,4,5
<b>Organization</b>  <b>Introduction:</b> The introduction ends with a thesis statement. (10)  <b>Body:</b> Each paragraph discusses a particular point and begins with a clear topic sentence. (5) Each paragraph has specific supporting details (fact, examples, etc.) (5) Each paragraph has cohesion and coherence. (5)  <b>Conclusion:</b> The conclusion summarizes the main points/paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's thoughts on the topic. (5)	<b>30</b>	CLO 1,4
<b>Total</b>	<b>60</b>	

## 5.2. Final exam rubrics: Write an argumentative essay: 100 points

Criteria/ word count	300-350 words (100%)	200-299 words (80%)	Under 200 words (60%)	CLO
<b>Language use and mechanics (20)</b>  A wide variety of sentence patterns and vocabulary are presented correctly.  Language control is good, and meaning is clear.  Spelling, capitalization and punctuation are correct.	20	16	12	CLO 1,4
<b>Content: (20)</b>  The essay fulfills the task requirements, and the topic is fully addressed. The content is originally created by the students.	20	16	12	CLO 1,4,5
<b>Organization: (60)</b>  <b>Introduction:</b> The introduction has a thesis statement. (10)  <b>Body:</b> At least one paragraph discusses the counter-arguments. (10)	10	8	6	CLO 1,4

Each paragraph discusses a particular point and begins with a clear topic sentence. (10)	10	8	6	
Each paragraph has specific supporting details (fact, examples, etc.). There are no sentences that are off-topic. (10)	10	8	6	
Each paragraph has cohesion and coherence. There are transition signals to show the relationship among ideas and to link paragraphs. (10)	10	8	6	
<b>Conclusion:</b> The conclusion summarizes the main points and paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's final thought on the topic. (10)	10	8	6	
<b>Total</b>	<b>100</b>	<b>80</b>	<b>60</b>	

**Date revised: 15 August, 2022**

*Ho Chi Minh City, 15 August 2022*

***Head of Department***

(Signature)

*Nguyễn Huy Cường*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of English**

**COURSE SYLLABUS**

**Course Name: Speaking AE2 (Effective Presentations)**

Course Code: **EN012IU**

**1. General information**

Course designation	<i>Giving presentations today becomes a vital skill for students to succeed not only in university but also at work in the future. Speaking AE2, therefore, provides students with the knowledge and skills needed to deliver effective presentations (informative and persuasive presentations).</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, mini presentations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	Students must complete AE1 courses
Course objectives	Speaking AE2 aims at introducing and training students many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language, and so on.

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course learning outcomes	Upon the successful completion of this course, students will be able to:				
	Competency level	Course learning outcome (CLO)			
	Knowledge	CLO1. Understand many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language			
	Skill	CLO2. Prepare and deliver effective, formal, structured presentations that are appropriate to the specific environment and audience.			
Attitude		CLO3. Deliver both informative and persuasive speech with confidence			
Content	<i>The description of the contents should clearly indicate the weighting of the content and the level.</i>				
	Weight: lecture session (2 hours)				
	Teaching levels: I (Introduce); T (Teach); U (Utilize)				
	Topic	Weight	Level		
	Orientation & Introduction Needs analysis	2	I, T, U		
	Building up confidence	2	T, U		
	The first few minutes	2	T, U		
	Organizing what you want to say	2	T, U		
	Summarizing and concluding	2	T, U		
	Using equipment	2	T, U		
	Delivery techniques: Putting it all together	2	T, U		
	Group presentations for the instructor's evaluation and advice	2	U		
	Introduction to persuasive speeches	2	T, U		
	Methods of persuasion	2	T, U		
	Maintaining interest	2	T, U		
	Dealing with problems and questions	2	T, U		
	Body language	2	T, U		
	Individual presentations for the instructor's evaluation and advice	4	U		
Examination forms	Oral Presentations				

Study and examination requirements	<p><i>Attendance</i></p> <p>Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination.</p> <p><i>Missed Tests</i></p> <p>Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (e.g. certified paper from doctors), students may re-take the examination.</p> <p><i>Class Behaviors</i></p> <p>Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Speaking AE2 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below:</p> <ul style="list-style-type: none"> <li>• Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request.</li> <li>• Participate fully and constructively in all course activities and discussions (if any).</li> <li>• Display appropriate courtesy to all involved in the class.</li> <li>• Provide constructive feedback to faculty members regarding their performance.</li> </ul> <p><i>Plagiarism</i></p> <p>Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination.</p>
Reading list	<p>[1] Lowe, S., &amp; Pile, L. (2010). <i>Presenting</i>. Singapore: Cengage Learning</p> <p>[2] Comfort, J. (1997). <i>Effective presentations</i>. Oxford: Oxford University Press</p> <p>[3] Lucas, S. (2014). <i>The art of public speaking</i> (12<sup>th</sup> edition). New York: McGraw-Hill Education.</p> <p>[4] Harrington, D., &amp; Lebeau, C. (2009). <i>Speaking of speech</i>. Macmillan</p>

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1						
2						
3						
4						

## 3. Planned learning activities and teaching methods

WEEK	Content	MATERIAL(S) COVERED	ACTIVITIES
WEEK 1	<ul style="list-style-type: none"> <li>• Orientation &amp; Introduction</li> <li>• Needs analysis</li> </ul>	[1] <i>Presenting</i> , p. 5	<p>Students will:</p> <ul style="list-style-type: none"> <li>• receive an introduction to effective presentation</li> <li>• think about their strength and weaknesses in presenting in English</li> <li>• identify and prioritize their immediate and future needs for presenting</li> <li>• share tips on improving weaknesses</li> </ul>
WEEK 2	<b>Building up confidence</b>		<p>Student will:</p> <ul style="list-style-type: none"> <li>- give a short speech about themselves to help them overcome initial shyness of standing up and speaking in public</li> </ul>
WEEK 3	<b>Unit 1: The first few minutes</b>	<ul style="list-style-type: none"> <li>• <i>Presenting</i>, pp. 8-13</li> <li>• <i>Effective Presentations</i>: p.7 + video clip; p.13+ video clip</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• learn the importance of making a good first impression</li> <li>• learn useful phrases for greeting the audience, introducing themselves and others, and giving the purpose of their presentation</li> </ul>
WEEK 4	<b>Unit 3: Organizing what you want to say</b>	<ul style="list-style-type: none"> <li>• <i>Presenting</i>, pp. 22-27)</li> <li>• <i>Effective Presentations</i>: p.19 + video clip</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• look at the importance of structuring their presentation</li> <li>• learn the useful phrases for outlining their presentation, organizing ideas and moving between different sections of their presentation</li> </ul>
WEEK 5	<b>Unit 6: Summarizing and concluding</b>	<ul style="list-style-type: none"> <li>• <i>Presenting</i>, pp. 40-45</li> <li>• <i>Effective Presentations</i>: p.41 + video clip</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>• look at ways of finishing a presentation effectively</li> <li>• learn useful phrases for ending their presentation, summarizing, handing over and thanking</li> </ul>

<b>WEEK 6</b>	<b>Unit 2: Using equipment</b>	<ul style="list-style-type: none"> <li>• <i>Presenting</i>, pp. 14-21)</li> <li>• <i>Effective Presentations</i>: p.31 + video clip</li> </ul>	Students will: <ul style="list-style-type: none"> <li>• use equipment and visuals to support their presentation</li> <li>• learn useful phrases for referring to visuals, ensuring their audience can see and expand on notes</li> </ul>
<b>WEEK 7</b>	<b>Delivery techniques: Putting it all together</b>	[2] <i>Effective Presentations</i> : p.50 + video clip Assignment: Topic(s) for group presentation)	Students will: <ul style="list-style-type: none"> <li>• watch a model presentation and discuss do's and don'ts for effective delivery</li> <li>• pick group members and plan their presentations for Week 8</li> </ul>
<b>WEEK 8</b>	Group presentations for the instructor's evaluation and advice		Students will: <ul style="list-style-type: none"> <li>• take turn to deliver a presentation on the topic(s) assigned by the instructor</li> <li>• consult the instructor for advice on the mid-term exam preparation</li> </ul>
<b>MIDTERM EXAMINATION</b>			
Students will give a five-to-six minute informative presentation on a topic to be determined.			
<b>WEEK 9</b>	<b>Introduction to persuasive speeches</b>	[3] <i>The art of public speaking</i> , Chapter 15 (Handout given by the instructor)	Students will: <ul style="list-style-type: none"> <li>• know types of persuasive speeches</li> <li>• know typical organizations of a persuasive speech</li> </ul>
<b>WEEK 10</b>	<b>Methods of persuasion</b>	[3] <i>The art of public speaking</i> , Chapter 16 (Handout given by the instructor)	Students will learn to persuade the audience by: <ul style="list-style-type: none"> <li>• building credibility</li> <li>• using evidence</li> <li>• reasoning</li> <li>• appealing to emotions</li> </ul>
<b>WEEK 11</b>	<b>Unit 4: Maintaining interest</b>	<ul style="list-style-type: none"> <li>• <i>Presenting</i>: pp. 28-33)</li> <li>• <i>Effective Presentations</i>: p.25 + video clip)</li> </ul>	Students will: <ul style="list-style-type: none"> <li>• look at maintaining interest through effective delivery</li> <li>• learn useful phrases for clarifying what you mean, checking if the audience is following and involving the audience</li> </ul>

<b>WEEK 12</b>	<b>Unit 5: Dealing with problems and questions</b>	<ul style="list-style-type: none"> <li>○ <i>Presenting</i>: pp. 34-39)</li> <li>○ <i>Effective Presentations</i>: p.44 (Question time)</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>● learn strategies for coping in unexpected situations</li> <li>● learn useful phrases for dealing with problems and questions</li> </ul>
<b>WEEK 13</b>	<b>Unit 6: Body language</b>	[2] <i>Effective Presentations</i> : pp.36-39	<p>Students will:</p> <ul style="list-style-type: none"> <li>● practise using language and body language to communicate the message clearly and persuasively</li> <li>● watch video clips about body language</li> <li>● learn how to control posture, eye contact, gestures and voice inflection</li> </ul>
<b>WEEK 14</b>	<b>Practice</b>	(to be determined by the instructor)	<p>Students will:</p> <ul style="list-style-type: none"> <li>- deliver individual or group presentations (assigned by the instructor)</li> </ul>
<b>WEEK 15</b>	<b>Wrap-up and advice</b>	(to be determined by the instructor)	<p>Students will:</p> <ul style="list-style-type: none"> <li>● consult the instructor for advice on the final exam preparation</li> <li>● continue to deliver individual or group presentations (if any)</li> </ul>
<b>FINAL EXAMINATION</b>			
Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined			

#### 4. Assessment plan

<b>Assessment Type</b>	<b>CLO1</b>	<b>CLO2</b>	<b>CLO3</b>
<b>On-going Assessment (30%)</b> (discussion, group presentation, individual presentation, and so on) <i>(It is requested that lecturers collect students' scripts or any type of evidence of their participation for possible fact check).</i>	80% Pass	80% Pass	80% Pass
<b>Midterm exam (30%)</b> (Students will give a five-to-six-minute informative presentation on a topic to be determined)	80% Pass	80% Pass	80% Pass
<b>Final exam (40%)</b> (Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined.)	80% Pass	80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

## 5. Rubrics & Marksheets

### 5.1. Midterm exam rubrics and marksheets

	<b>Very Poor</b>	<b>Poor</b>	<b>Average</b>	<b>Good</b>	<b>Excellent</b>
<b>Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, Etc)</b>	<ul style="list-style-type: none"> <li>- Mumbles, often mispronounces, very difficult to understand.</li> <li>- Dead person talking, voice to text software does better</li> </ul>	<ul style="list-style-type: none"> <li>- Slurred speech, mispronounces some words. Difficult to understand.</li> <li>- Quiet, monotone, sing/song, little or no expression, boring.</li> </ul>	<ul style="list-style-type: none"> <li>- Clear voice, few pronunciation errors. Some slurring. Most can understand the presentation</li> <li>- Some use of voice to show interest</li> </ul>	<ul style="list-style-type: none"> <li>- Crisp, clear voice, correct, precise pronunciation, all can understand.</li> <li>- proper volume; steady rate; enthusiasm; confidence</li> </ul>	<ul style="list-style-type: none"> <li>- Native like</li> </ul>
<b>Grammar&amp; Vocabulary (Usage And Appropriateness For Audience)</b>	<ul style="list-style-type: none"> <li>- Frequent grammar or spelling errors</li> <li>- Inappropriate level for the audience, Misuse vocabulary</li> </ul>	<ul style="list-style-type: none"> <li>- Noticeable Errors</li> <li>- Often too simple or sophisticated, inconsistent. Some vocabulary incorrectly used</li> </ul>	<ul style="list-style-type: none"> <li>- Minor errors</li> <li>- Generally appropriate, little variation or creativity</li> </ul>	<ul style="list-style-type: none"> <li>- No errors, but simple language</li> <li>- Always appropriate for the audience. Excellent use of vocabulary</li> </ul>	<ul style="list-style-type: none"> <li>- No errors. Excellent use of grammar to support ideas</li> <li>- Creative use of language</li> </ul>
<b>Body Language, Gestures, Eye Contact (Turns back to audience and reads screen – 0)</b>	<ul style="list-style-type: none"> <li>- Dead person on stage</li> <li>- Almost no eye contact, reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- Excessive movement or many distracting gestures</li> <li>- Occasionally eye contact, mostly reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- Some distracting gestures, and some movement and useful gestures</li> <li>- Generally maintains eye contact frequently reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- No distracting gestures. Body language supports speech</li> <li>- Excellent eye contact, seldom uses notes</li> </ul>	<ul style="list-style-type: none"> <li>- Excellent use of body language</li> <li>- Constant eye contact, no use of notes</li> </ul>
<b>Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST)</b>	<ul style="list-style-type: none"> <li>- Difficult to follow as disorganized</li> </ul>	<ul style="list-style-type: none"> <li>- Generally follows outline, poor introduction or conclusion.</li> </ul>	<ul style="list-style-type: none"> <li>- Follows outline, material generally well organized. Some use of transitions and linkage of ideas. Conclusion acceptable</li> </ul>	<ul style="list-style-type: none"> <li>- Follows outline, material well organized.</li> <li>- Ideas clearly linked. Some use of transitions</li> </ul>	<ul style="list-style-type: none"> <li>- Excellent, clear linkage of ideas.</li> <li>- Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion</li> </ul>
<b>Content: Relevant/ Interesting/ Accurate</b>	<ul style="list-style-type: none"> <li>- Several errors or lacks critical information</li> </ul>	<ul style="list-style-type: none"> <li>- Some errors and has irrelevant information</li> </ul>	<ul style="list-style-type: none"> <li>- Information is generally accurate, minor errors, generally meets needs of the audience</li> </ul>	<ul style="list-style-type: none"> <li>- Accurate information, related to needs of audience</li> </ul>	<ul style="list-style-type: none"> <li>- No errors, answers all needs of the audience</li> </ul>
<b>Visual Aids: Appropriate, Clear (Movies, sound – 0)</b>	<ul style="list-style-type: none"> <li>- Slides consist of full paragraphs of text, no or superfluous graphics</li> <li>- Tiny font</li> </ul>	<ul style="list-style-type: none"> <li>- Slides have full sentences and occasional superfluous graphics, Difficult to read</li> </ul>	<ul style="list-style-type: none"> <li>- Slides have short phrases, Graphics relate to text and presentation. Easily read</li> </ul>	<ul style="list-style-type: none"> <li>- Attractive, informative graphics, only key words, easily understood, Good use of masking</li> </ul>	<ul style="list-style-type: none"> <li>- Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation</li> </ul>
<b>Overall effectiveness</b>	<ul style="list-style-type: none"> <li>- Ineffective, alienated audience</li> </ul>	<ul style="list-style-type: none"> <li>- Little positive effect or exchange of info.. Audience bored</li> </ul>	<ul style="list-style-type: none"> <li>- Audience learned something, no change in attitude</li> </ul>	<ul style="list-style-type: none"> <li>- Audience generally positive and learned from presentation</li> </ul>	<ul style="list-style-type: none"> <li>- Audience was kept interested and would remember key points</li> </ul>



ACADEMIC YEAR 2021 - 2022

DATE: \_\_\_\_\_

Student name : \_\_\_\_\_ Student ID : \_\_\_\_\_  
Topic : \_\_\_\_\_

Wtg.	Criteria	Very poor	Poor	Average	Good	Excellent	Comments
15	<b>Pronunciation &amp; Voice Techniques</b> (Pause, Volume, Speed Change, Stress, Tone, etc.)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
15	<b>Language use: Grammar &amp; Vocabulary (usage and appropriateness for audience)</b>	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	<b>Body Language: Gestures, Eye contact, Facial expressions</b> (turns back to the audience and reads from screen: 0 pt)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
20	<b>Organization: Intro, Body, Ending, Coherence</b> (see below)	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
20	<b>Content: Relevance, Accuracy</b>	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
10	<b>Visual aids: Appropriateness, Clarity</b> (Movies, sound: 0 pt)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
10	<b>Overall effectiveness</b>	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
<b>FINAL SCORE:</b> /100							

Negative points:  $\diamond$  Timing: <3m: -15pts 3m - 3m29: -10pts 3m30 - 3m59: -5pts 4m - 6m: OK >6m: -5pts

		Yes	No
A.	Introduction		
a.	Greeting, name, position ( <i>Good morning ladies and gentlemen. My name is _____. I'm a _____</i> )	<input type="checkbox"/>	<input type="checkbox"/>
b.	Purpose/ Objective ( <i>The purpose of this talk is to _____</i> )	<input type="checkbox"/>	<input type="checkbox"/>
c.	Connect with the audience ( <i>I can see that all of you love to _____</i> )	<input type="checkbox"/>	<input type="checkbox"/>
d.	Outline/ Main part ( <i>I've divided my presentation into _____ parts</i> )	<input type="checkbox"/>	<input type="checkbox"/>
e.	Questions ( <i>Should you have any questions, please save them until the end of my presentation</i> )	<input type="checkbox"/>	<input type="checkbox"/>
B.	Body ( <i>Transitions: Let's start with _____/ That brings me to _____/ Firstly, Secondly, Next, Lastly</i> )	<input type="checkbox"/>	<input type="checkbox"/>
C.	Ending		
a.	Signaling the end ( <i>That brings me to the end of my presentation</i> )	<input type="checkbox"/>	<input type="checkbox"/>
b.	Summary ( <i>Let me just run over the key points again</i> )	<input type="checkbox"/>	<input type="checkbox"/>
c.	Closing ( <i>Thank you very much for your attention</i> )	<input type="checkbox"/>	<input type="checkbox"/>
d.	Inviting questions ( <i>I'd be glad to answer any questions you might have</i> )	<input type="checkbox"/>	<input type="checkbox"/>

Examiner : .....

## 5.2.Final exam rubrics and marksheets

	<b>Very Poor</b>	<b>Poor</b>	<b>Average</b>	<b>Good</b>	<b>Excellent</b>
<b>Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, etc.)</b>	<ul style="list-style-type: none"> <li>- Mumbles, often mispronounces, very difficult to understand.</li> <li>- Dead person talking, voice to text software does better</li> </ul>	<ul style="list-style-type: none"> <li>- Slurred speech mispronounces some words. Difficult to understand.</li> <li>- Quiet, monotone, sing/song, little or no expression, boring.</li> </ul>	<ul style="list-style-type: none"> <li>- Clear voice, few pronunciation errors. Some slurring. Most can understand the presentation.</li> <li>- Some use of voice to show interest</li> </ul>	<ul style="list-style-type: none"> <li>- Crisp, clear voice, correct, precise pronunciation, all can understand.</li> <li>- Proper volume; steady rate; enthusiasm; confidence</li> </ul>	<ul style="list-style-type: none"> <li>- Native like</li> </ul>
<b>Grammar &amp; Vocabulary (Usage and Appropriateness for Audience)</b>	<ul style="list-style-type: none"> <li>- Frequent grammar or spelling errors</li> <li>- Inappropriate level for the audience. Misuse vocabulary</li> </ul>	<ul style="list-style-type: none"> <li>- Noticeable Errors</li> <li>- Often too simple or sophisticated, inconsistent. Some vocabulary incorrectly used</li> </ul>	<ul style="list-style-type: none"> <li>- Minor errors</li> <li>- Generally appropriate, little variation or creativity</li> </ul>	<ul style="list-style-type: none"> <li>- No errors, but simple language</li> <li>- Always appropriate for the audience. Excellent use of vocabulary</li> </ul>	<ul style="list-style-type: none"> <li>- No errors. Excellent use of grammar to support ideas</li> <li>- Creative use of language</li> </ul>
<b>Body Language: Posture, Gestures, Eye contact, Facial expression (Turns back to audience and reads screen – 0)</b>	<ul style="list-style-type: none"> <li>- Dead person on stage</li> <li>- Almost no eye contact, reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- Excessive movement or many distracting gestures</li> <li>- Occasionally eye contact, mostly reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- Some distracting gestures, and some movement and useful gestures</li> <li>- Generally maintains eye contact frequently reads notes/screen</li> </ul>	<ul style="list-style-type: none"> <li>- No distracting gestures. Body language supports speech</li> <li>- Excellent eye contact, seldom uses notes</li> </ul>	<ul style="list-style-type: none"> <li>- Excellent use of body language</li> <li>- Constant eye contact, no use of notes</li> </ul>
<b>Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST)</b>	<ul style="list-style-type: none"> <li>- Difficult to follow as disorganized</li> </ul>	<ul style="list-style-type: none"> <li>- Generally follows outline, poor introduction or conclusion.</li> </ul>	<ul style="list-style-type: none"> <li>- Follows outline, material generally well organized. Some use of transitions and linkage of ideas.</li> <li>- Conclusion acceptable</li> </ul>	<ul style="list-style-type: none"> <li>- Follows outline, material well organized.</li> <li>- Ideas clearly linked. Some use of transitions</li> </ul>	<ul style="list-style-type: none"> <li>- Excellent, clear linkage of ideas.</li> <li>- Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion</li> </ul>
<b>Content: Relevant/Accurate, Informative and Persuasive</b>	<ul style="list-style-type: none"> <li>- Several errors or lacks critical information</li> <li>- Just focus on giving information</li> </ul>	<ul style="list-style-type: none"> <li>- Some errors and has irrelevant information</li> <li>- Give reasons with little or no emphasis on persuasion</li> </ul>	<ul style="list-style-type: none"> <li>- Information is generally accurate, minor errors</li> <li>- Give frequent emphasis on persuasion</li> </ul>	<ul style="list-style-type: none"> <li>- Accurate information, related to needs of audience</li> <li>- Give frequent emphasis on persuasion</li> </ul>	<ul style="list-style-type: none"> <li>- No errors, answers all needs of the audience</li> <li>- Persuade the audience well</li> </ul>
<b>Visual Aids: Appropriateness, Clarity (Use of video clip exceeding 20 seconds – 0)</b>	<ul style="list-style-type: none"> <li>- Slides consist of full paragraphs of text, no or superfluous graphics</li> <li>- Tiny font</li> </ul>	<ul style="list-style-type: none"> <li>- Slides have full sentences and occasional superfluous graphics,</li> <li>- Difficult to read</li> </ul>	<ul style="list-style-type: none"> <li>- Slides have short phrases; Graphics relate to text and presentation. Easily read</li> </ul>	<ul style="list-style-type: none"> <li>- Attractive, informative graphics, only key words, easily understood, good use of masking</li> </ul>	<ul style="list-style-type: none"> <li>- Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation</li> </ul>
<b>Question response</b>	<ul style="list-style-type: none"> <li>- Welcomes the question</li> </ul>	<ul style="list-style-type: none"> <li>- Listens carefully, doesn't interrupt</li> </ul>	<ul style="list-style-type: none"> <li>- Thinks before answering</li> <li>- Clarifies, rephrases as needed</li> </ul>	<ul style="list-style-type: none"> <li>- Answers correctly and briefly</li> </ul>	<ul style="list-style-type: none"> <li>- Checks to see if questioner is satisfied</li> </ul>



ACADEMIC YEAR 2021 - 2022  
DATE: \_\_\_\_\_

Student name : ..... Student ID : .....  
Topic : .....

Wtg.	Criteria	Very poor	Poor	Average	Good	Excellent	Comments
15	Pronunciation & Voice Techniques (Pause, Volume, Speed Change, Stress, Tone, etc.)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	Language use: Grammar & Vocabulary (usage and appropriateness for audience)	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
15	Body Language: Posture, Gestures, Eye contact, Facial expression (turns back to the audience and reads from screen: 0 pt)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
15	Organization: Intro, Body, Ending, Coherence (see below)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
20	Content: Relevant, Accurate, Informative and Persuasive	(1-4)	(5-8)	(9-12)	(13-16)	(17-20)	
15	Visual aids: Appropriateness, Clarity (Movies, sound: 0 pt)	(1-3)	(4-6)	(7-9)	(10-12)	(13-15)	
10	Question response	(1-2)	(3-4)	(5-6)	(7-8)	(9-10)	
SCORE (max.100): _____		BONUS (max.10): _____			TOTAL SCORE (max.100): _____		

Deduction points: ♦ No references: -10      ♦ Timing: <5m: -15pts      5m - 5m29: -10pts      5m30 - 5m59: -5pts      >8m: -5pts

Bonus points: Up to 10pts for creativity, which involves PowerPoint design, Organization of information, Presentation style ...

Organization:

A. Introduction

- a. Greeting, name, position (*Good morning, ladies and gentlemen. My name is \_\_\_\_\_. I'm a \_\_\_\_\_.* )
- b. Connect with the audience (*I can see that all of you love to \_\_\_\_\_.* )
- c. Purpose/ Objective (*The purpose of this talk is to \_\_\_\_\_.* )
- d. Time length (*My presentation should last for \_\_\_\_\_.* )
- e. Outline/ Main part (*I've divided my presentation into \_\_\_\_ parts* )
- f. Questions (*Should you have any questions, please save them until the end of my presentation* )

B. Body (*Transitions: Let's start with \_\_\_\_ / That brings me to \_\_\_\_ / Firstly, Secondly, Next, Lastly* )

C. Ending

- a. Signaling the end (*That brings me to the end of my presentation* )
- b. Summary (*Let me just run over the key points again* )
- c. Closing (*Thank you very much for your attention* )
- d. Inviting questions (*I'd be glad to answer any questions you might have* )

Yes      No

Examiner : \_\_\_\_\_

**Date revised: 15 August, 2022**

*Ho Chi Minh City, 15 August 2022*

***Head of Department***

*(Signature)*

*Nguyễn Huy Cường*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of English**

**COURSE SYLLABUS**

**Course Name: Writing AE2 (Research Paper Writing)**

**Course Code: EN011IU**

**1. General information**

Course designation	<i>This course introduces basic concepts in research paper writing, especially the role of generalizations, definitions, classifications, and the structure of a research paper to students who attend English- medium college or university. It also provides them with methods of developing and presenting an argument, a comparison or a contrast.</i>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 90 Contact hours (lecture, exercise): 30 Private study including examination preparation, specified in hours <sup>1</sup> : 60
Credit points	2
Required and recommended prerequisites for joining the course	Students must complete Writing AE1 course

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<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course objectives	<p>Students are required to work on the tasks selected to maximize their exposure to written communication and are expected to become competent writers in the particular genre: the research paper.</p> <p>As writing is part of an integrated skill of reading and writing where reading serves as input to trigger writing, this course is designed to familiarize non-native students with academic literature in their major study by having them read and critically respond to texts of a variety of topics ranging from natural sciences such as biology to social sciences and humanities like education, linguistics and psychology.</p>																																				
Course learning outcomes	<p>Upon the successful completion of this course, students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1. Understand the structure of a research paper and employ appropriate academic language in writing a research paper</td></tr> <tr> <td>Skill</td><td>CLO2. Read critically, analyze, and annotate academic articles and journals CLO3. Employ the research writing skills obtained to work on their own paper in their major study.</td></tr> <tr> <td>Attitude</td><td>CLO4. Reason around ethical issues in writing research paper and avoid committing plagiarism</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Understand the structure of a research paper and employ appropriate academic language in writing a research paper	Skill	CLO2. Read critically, analyze, and annotate academic articles and journals CLO3. Employ the research writing skills obtained to work on their own paper in their major study.	Attitude	CLO4. Reason around ethical issues in writing research paper and avoid committing plagiarism																												
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Course Review	2	U																																			
Examination forms	Essay writing																																				

Study and examination requirements	<p><i>Attendance</i></p> <p>Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination.</p> <p><i>Assignment (Literature review)</i></p> <p>Purpose: Students will use the knowledge of paraphrasing, summarising, developing arguments, and APA styles to write a 1,000-word literature review on a research scope of their choice.</p> <p>Task:</p> <ul style="list-style-type: none"> <li>– Follow guidelines on how to write a literature review.</li> <li>– Use relevant academic writing skills such as paraphrasing, summarising, developing arguments, and APA 7th Style Guidelines – see <a href="https://www.apastyle.org/">https://www.apastyle.org/</a></li> <li>– Develop arguments in relation to the research scope and identify the research gap</li> </ul> <p><b>Notes:</b> All papers should be typed, double-spaced, in 13-pt font, and with 1-inch margins. All papers must be original for this class. Criterion-referenced grading is used in this course.</p> <p><i>Missed Tests</i></p> <p>Students are not allowed to miss any of the tests (both Mid-term and Final). There are very few exceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination.</p> <p><i>Class Behaviors</i></p> <p>Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE2 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below:</p> <ul style="list-style-type: none"> <li>- Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request.</li> <li>- Participate fully and constructively in all course activities and discussions (if any).</li> <li>- Display appropriate courtesy to all involved in the class.</li> <li>- Provide constructive feedback to faculty members regarding their performance.</li> </ul> <p><i>Plagiarism</i></p> <p>All forms of plagiarism and unauthorised collusion are seriously regarded and could result in penalties.</p> <p>Plagiarism occurs when students copy or reproduce people's words or ideas and then present them as students' own work without proper acknowledgement, including when students copy the work of their fellow students.</p> <p>Plagiarism in student submissions can be detected by:</p> <ul style="list-style-type: none"> <li>• some web-based programs such as SafeAssign or Turnitin, or</li> <li>• examiner's judgments with evidence of originals</li> </ul>
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	<p>The rater will review the paper to check if citations or references are provided properly. Penalties due to improper citations or references include:</p> <table border="1"> <thead> <tr> <th>Degree of magnitude</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Below 15%</td><td>Marked as it is.</td></tr> <tr> <td>15% - 25%</td><td>The score is deducted by <b>25%</b>.</td></tr> <tr> <td>25% - 40%</td><td>The score is deducted by <b>50%</b></td></tr> <tr> <td>Over 40%</td><td>The score is <b>0</b>.</td></tr> </tbody> </table> <p>Notes: Part of the test is marked as it is if no plagiarism is detected. Students who plagiarize over 40% <u>twice</u> will be prohibited from sitting the final examination.</p> <p><i>Writing Center (Room 509)</i> Students are encouraged to visit the Writing Center or to schedule an appointment for additional help.</p>	Degree of magnitude	Description	Below 15%	Marked as it is.	15% - 25%	The score is deducted by <b>25%</b> .	25% - 40%	The score is deducted by <b>50%</b>	Over 40%	The score is <b>0</b> .
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## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1						
2						
3						
4						

## 3. Planned learning activities and teaching methods

WEEK	CONTENT—SUGGESTED TASKS	ASSIGNMENT/ HOMEWORK
1	<b>Orientation of the Course</b> <b>Unit 1: The Academic Writing Process</b> <b>Introduction</b>	
2	<b>Unit 1: The Academic Writing Process (Cont.)</b> Thinking about writing processes Distinguishing between academic and personal styles of writing Grammar of academic discourse	HW: Task 10
3	<b>Unit 2: Researching and Writing</b> Recognizing categories and classification The language of classification The structure of a research paper	HW: Task 17
4	<b>Unit 3: Fundamentals &amp; Feedback</b> Exploring comparison and contrast structures The language of comparison and contrast Using comparisons and contrasts to evaluate and recommend	HW: Task 12
5	<b>Unit 3: Fundamentals &amp; Feedback (Cont.)</b> The research paper Identifying a research gap The writing process	<b>Assignment 1: Task 20</b>
6	<b>Unit 4: Definitions, Vocabulary &amp; Clarity</b> The clarity principle The language of definition The place of definition The writing process	HW: Task 15
7	<b>Unit 5: Generalizations, Facts and Honesty</b> Honesty principle The language of generalization	HW: Task 13
8	<b>Unit 5: Generalizations, Facts and Honesty (Cont.)</b> Writing a literature review The writing process Brainstorming and clustering APA 7th Style Guidelines – see <a href="https://www.apastyle.org/">https://www.apastyle.org/</a>	<b>Assignment 2: Writing Literature review</b>
<b>MID-TERM EXAMINATION</b>		
9	<b>Unit 6: Seeing Ideas and Sharing Texts</b> Writing about events in time Connecting events Learning about peer reviews	HW: Tasks 12 & 13

10	<b><u>Unit 7: Description, Methods &amp; Reality</u></b> Describing processes and products The language for writing about processes Writing the Methods section Giving and getting formal peer feedback	HW: Tasks 9 & 11
11	<b><u>Unit 8: Results, Discussion &amp; Relevance</u></b> What is an argument? The language of argument The Results and Discussion sections Finding an academic voice	HW: Task 9
12	<b><u>Unit 9: The Whole Academic Text</u></b> S-P-S-E: Focus on structure S-P-S-E in the introduction The language of coherence and connection Teacher evaluation	HW: Task 9
13	<b><u>Unit 10: Creating the Whole Text</u></b> Structure of the research paper Creating your own research	
14	<b><u>Unit 10: Creating the Whole Text</u></b> Plagiarism Creating citations Paraphrase and summary Authorial identity	
15	<b>Course Review</b>	<b>Submitting Literature review</b>
<b>FINAL EXAM</b>		

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Class participation and Assignments (30%)	80% Pass	80% Pass	80% Pass	
Midterm exam (30%)	80% Pass		80% Pass	80% Pass
Final exam (40%)	80% Pass		80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics

##### 5.1. Midterm exam sample rubrics (100 points)

### **TASK 1: 30 points**

CATEGORIES	CRITERIA	POINTS	CLO
<b>Category</b>	Farm animals seem to have more complex cognitive and social skills	<b>7.5</b>	CLO 1,2
<b>Sub-category 1</b>	1. Sheep experience stress a. increase stress (when isolated from the flock) b. reduce stress (when seeing familiar sheep faces)	<b>7.5</b>	
<b>Sub-category 2</b>	2. Cows' co-operative partnerships & physiological response on learning something new a. Those learning tasks experience an increase in heart rate (when facing same situation). b. Those not learning tasks do not experience a heart rate increase.	<b>7.5</b>	CLO 1,2
<b>Sub-category 3</b>	3. Pigs' different reactions react differently based on past experience a. avoid the place where they have been shut for long b. go for the place where they were released from quickly.	<b>7.5</b>	CLO 1,2
<b>Total</b>	<b>30</b>		

### **TASK 2: 70 points**

CATEGORIES	CRITERIA	POINTS	CLO
<b>Content</b>	All main points relevant to topic Essay question fully answers	<b>20</b>	CLO 1,3,4
<b>Organization</b>	Topic and purpose of the essay discussed in the introduction Each main point discussed in a paragraph All main points summarized and rephrased in the conclusion	<b>20</b>	CLO 1,3,4
<b>Coherence</b>	Paragraphs ordered in a systematic manner based on, for example, importance, priority, etc. Comparison/contrast transitions are properly used.	<b>15</b>	CLO 1,3,4
<b>Style and Tone</b>	Formal writing with full forms Polite writing Academic vocabulary	<b>15</b>	CLO 1,3,4
<b>Total</b>	<b>70</b>		

### **5.2. Final exam rubrics: 100 points**

CATEGORIES	CRITERIA	POINTS	CLO
<b>Content</b>	<ul style="list-style-type: none"> <li>• Presenting his/her view on the question clearly and persuasively</li> </ul>	<b>20</b>	CLO 1,3,4
<b>Structure of ideas</b>	<ul style="list-style-type: none"> <li>• Introduction with thesis statement, and conclusion with summary and comment</li> <li>• Topic sentences well supported with explanations, examples, etc.</li> </ul>	<b>40</b>	CLO 1,3,4
<b>Convincing argumentative techniques, e.g., counterargument</b>		<b>20</b>	CLO 1,3,4
<b>Language use:</b> <i>use vocabulary and grammatical structures</i>		<b>20</b>	CLO 1,3,4
<b>Total</b>		<b>100</b>	

Date revised: 15 August, 2022

Ho Chi Minh City, 15 August 2022

*Head of Department*

*(Signature)*

*Nguyễn Huy Cường*



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Introduction to Computing**

**Course Code: IT064**

### 1. General information

Course designation	This course introduces students to a broad knowledge of the computer science and information technology fields. Topics covered will include basic computer concepts, components of computer hardware and operating systems software as well as data and telecommunications systems. Students can use the knowledge they've gained to strengthen their future-oriented job.
Semester(s) in which the course is taught	1,3
Person responsible for the course	Dr. Nguyen Trung Ky
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 135 hours. Contact hours: 45 hours (lecture). Private study including examination preparation, specified in hours: 90 hours.
Credit points	Number of credits: 3 Lecture: 3 Laboratory: 0
Required and recommended prerequisites for joining the course	None
Course objectives	This course is to provide fundamentals and basic concepts of computer science and engineering, basics of Computing such as basic concepts, models, trends in industry. Introduction to majors and curricula, career path of all majors in computing, career orientation, job requirements and career opportunities in industry are also included in this course.
Course learning outcomes	CLO1 - Demonstrate an in-depth understanding of fundamental knowledge and history of computing, all career paths in computing and learning methodologies in university.

	<p>CLO2 - Describe basic hardware and software concepts and basic computing terminologies  CLO3 - Make a plan for his/her own future career and his/her works  CLO4 - Seek information from Internet and manage his/her information.  CLO5 - Follow the discussions of instructors and classmates.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1, CLO2.</td></tr> <tr> <td>Skill</td><td>CLO3, CLO4.</td></tr> <tr> <td>Attitude</td><td>CLO5.</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2.	Skill	CLO3, CLO4.	Attitude	CLO5.																						
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Information System and Application	2	T, U																													
Majors and Curriculum, Career Paths and Orientation Careers at a Hardware, Network and Software Company	1	I																													
Revision	1																														
Examination forms	Multiple-choice questions, short-answer questions																														
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																														
Reading list	<p>[1] Nell Dale and John Lewis, “Computer science: Illuminated”, 7th Edition, Jones &amp; Bartlett Learning Publisher, ISBN-13 978-1284155617, 2019.</p> <p>[2] J. Glenn Brookshear, “Computer Science: An Overview”, 12<sup>th</sup> Edition, Pearson Publisher, ISBN-13 978-0133760064, 2014.</p> <p>[3] Peter Wentworth, Jeffrey Elkner, “How to Think Like a Computer Scientist: Learning with Python 3 Documentation”, 3rd Edition, Allen B. Downey and Chris Meyers, Green Tea Press Publisher, ISBN-13 978-0971677500, 2020.</p>																														

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X			X		
2	X			X		
3	X					

4	X				
5				X	

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	The Overall Picture	1		Lecture, Discussion	[1]. Chapter 1
2	Binary Values and Number System	1, 2	Quiz.	Lecture, In-class quiz	[1]. Chapter 2
3	Data Representation	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 3
4	Gates and Circuits	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 4
5	Computing Components	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 5
6	Low-level Programming Languages and Pseudocode	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 6
7	<b>Midterm</b>				
8	Problem Solving and Algorithm, Abstract Data Types and Subprograms	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 7,8
9	Object-oriented Design and High-level Programming Languages	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 9
10	Operating System and File System and Directory	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 10, 11
11	Information System, Artificial Intelligence	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 12, 13
12	Simulation, Graphics, Gaming, and Other Programming Networks	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 14, 15
13	The World Wide Web Computer Security	1, 2	Quiz	Lecture, In-class quiz	[1]. Chapter 16, 17
14	Majors and Curriculum, Career Paths and Orientation, Careers at Hardware, Network and Software Company	3, 4		Lecture, Discussion	
15	Revision			Review-test	
16	<b>Final exam</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Quiz (10%)	25%	25%	33.3%	33.3%	25%
Midterm examination (30%)	25%	25%			25%
Projects/Presentations/ Report (20%)	25%	25%	33.3%	33.3%	25%
Final examination (40%)	25%	25%	33.3%	33.3%	25%

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

- 
- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

#### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

#### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

Capstone	Milestone	Benchmark
----------	-----------	-----------

	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

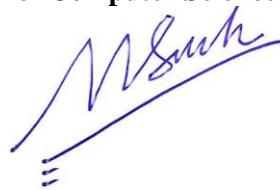
	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
**INTERNATIONAL UNIVERSITY**  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: C/C++ Programming**

**Course Code: IT116**

### 1. General information

Course designation	Learning the basics of programming
Semester(s) in which the course is taught	2
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Compulsory (CS, NE, CE)
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours: 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	None
Course objectives	This course concentrates on learning the basics of programming languages which are the foundations for further studies in IT. The course enables students to get familiar with C programming language. The course covers all basic C data structures, control flows, simple data structures as well as other advanced topics which include pointers, bit operators, file processing, dynamic data types.
Course learning outcomes	CLO 1. Understand programming languages and applications, how applications work CLO 2. Understand basic data structure and control flow of C programming language

	CLO 3. Able to write applications using C																																																
	<table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1</td></tr> <tr> <td>Skill</td><td>2, 3</td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1	Skill	2, 3	Attitude																																									
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Examination forms	Short-answer questions, Programming exercises																																																
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																																
Reading list	1. Paul Deitel, C How to Program 8th, 2016																																																

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO\SLT	1	2	3	4	5	6
1	x					
2		xxx				
3		xxx				

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Computer and Programming Language	1	Quiz	Lecture	1
2	Introduction to C Programming Language	1	Quiz	Lecture	1
3	C Basic Data Types	1	Quiz	Lecture	1
4	Control Flow: Branching statements	2, 3	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
5	Control Flow: Iteration	2, 3	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
6	Functions	2, 3	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
7	Array	2, 3	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
8	Pointers	2, 3	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
<b>Midterm</b>					
9	String	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
10	File Processing	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
11	Dynamic Memory Allocation	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
12	Struct, Union	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
13	Bitwise Operation	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1

14	Linked list, Stack, Queue	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
15	Binary tree	2, 3	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
<b>Final</b>					

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quiz / Assignment (10%)	50%	10%	10%
Labs (20%)	10%	30%	30%
Midterm examination (30%)	30%	30%	30%
Final examination (40%)	10%	30%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		
Summary and conclusions appropriate and complete		5		
<b>Organization (10%)</b>				
Distinct introduction, body, conclusions		5		
Content clearly and logically organized, good transitions		5		
<b>Presentation (20%)</b>				
Correct spelling, grammar, and syntax		10		
Clear and easy to read		10		
<b>Quality of Layout and Graphics (10%)</b>		10		
<b>TOTAL SCORE</b>		100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW
--

<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
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<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

*Source: Association of American Colleges and Universities*

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
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Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Theoretical Models in Computing**

**Course Code: IT131**

### 1. General information

Course designation	This course is oriented to those undergraduate students who require a working knowledge of numerical methods
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Ha Viet Uyen Synh
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours: 45 (lecture) + 30 (laboratory) <u>Private study including examination preparation, specified in hours:</u> 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	
Course objectives	This course is oriented to those undergraduate students who require a working knowledge of numerical methods. Topics to be covered include solving nonlinear equations and linear systems, interpolation and least square method, numerical evaluation of derivatives, integral and solution of differential equations. The focus will be on understanding the solving techniques and the engineering meaning of diver problems, and not on rigorous proofs. ♦?
Course learning outcomes	CLO 1. Solve numerically nonlinear equations by bisection, iterative and Newton methods.

	<p>CLO 2. Solve big linear systems by exact and iterative methods.</p> <p>CLO 3. Fit data by interpolation polynomials, Spline ♦ polynomials and least square methods.</p> <p>CLO 4. Evaluate numerically derivatives and integrals.</p> <p>CLO 5. Solve numerically Boundary value problems by Euler, Euler improved and Finite Difference methods.</p> <p>CLO 6. Study diverse engineering problems by numerical methods</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1,2,3,4,5</td></tr> <tr> <td>Skill</td><td>6</td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1,2,3,4,5	Skill	6	Attitude																							
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Examination forms	Multiple-choice questions, short-answer questions																														
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																														
Reading list	1. Steven C. Chapra, Raymond P. Canale, Numerical methods for engineers 6th, 2008																														

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-6) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	x	x				
2	x					
3	x					
4		x				
5	x					
6		x				

## 1.

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Chapter 1. Introduction			lecture, exercises	
2	Chapter 2. Errors & Taylor Series	1	Quiz, Lab, Exam	lecture, exercises, lab	
3	Chapter 3. Roots of Non-linear Equations	1	Quiz, Lab, Exam	lecture, exercises, lab	
4	Chapter 4. Linear Algebraic Equations	2	Quiz, Lab, Exam	lecture, exercises, lab	
5	Chapter 5. Optimization	3	Quiz, Lab, Exam	lecture, exercises, lab	
6	<b>Midterm</b>				
	Chapter 6. Curve Fitting & Interpolation	4	Quiz, Lab, Exam	lecture, exercises, lab	
7	Chapter 7. Numerical Differentiation and Integration	5	Quiz, Lab, Exam	lecture, exercises, lab	
8	Chapter 8. Ordinary Differential Equations	6	Quiz, Exam	lecture, exercises, lab	
9	Chapter 9. Partial Differential Equations	6	Quiz, Exam	lecture, exercises, lab	
10	<b>Final exam</b>				

### 3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Quiz (10%)	20%	20%	20%	20%	20%	20%
Labs (20%)	30%	30%	30%	30%	30%	30%
Midterm examination (30%)	50%	50%	50%			
Final examination (40%)				50%	50%	50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- 
1. When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
			Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

#### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

#### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark
	4	3	2

<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

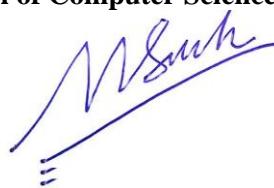
	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Discrete Mathematics**

**Course Code: IT153**

### 1. General information

Course designation	The course provides students the ability to reason and think mathematically and logically; and apply this ability to analyze and solve discrete practical problems in Computer Science and IT.
Semester(s) in which the course is taught	4
Person responsible for the course	Assoc. Prof. Nguyen Van Sinh
Language	English
Relation to curriculum	Compulsory (NE, CE, CS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) Private study including examination preparation, specified in hours: 90
Credit points	Number of credits : 3 Lecture: 3 Laboratory: 0
Required and recommended prerequisites for joining the course	C/C++ Programming Calculus 1, 2
Course objectives	This course provides students the based knowledge of discrete mathematics. To develop the ability to reason and think mathematically and logically; and to apply this ability to analyzing and solving discrete practical problems in computer science. This is an application-oriented course based upon the study of events that occur in small, or discrete in computer science, segments in

	business, industry, government and the digital areas. Students will be introduced to the mathematical tools of logic and set theory, counting, number theory, and graph theory. Practical applications will be introduced throughout the course																																													
Course learning outcomes	<p>CLO 1. Understand and apply count/enumerate objects in a systematic way.</p> <p>CLO 2. Understand mathematical reasoning in order to read, comprehend and construct mathematical arguments; Understand to work with discrete structures and practical problems in computer science and IT</p> <p>CLO 3. Apply algorithm thinking and modeling; Apply knowledge in computer science for problems solving</p> <p>CLO 4. Have a sense of preparation of good mathematical knowledges to approach and solve problems in computer science and information technology.</p>																																													
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Reading list	<ol style="list-style-type: none"> <li>1. Kenneth H. Rosen, Discrete Mathematics and Its Applications 8<sup>th</sup> edition, 2019.</li> <li>2. Oscar Levin, Discrete mathematics An Open Introduction. 3<sup>rd</sup> edition, 2019.</li> <li>3. Vietnamese book: N.V.Sinh, T.M.Hà, N.T.T.Sang, N.M.Quân, “Nền tảng Toán học trong Công nghệ Thông tin”, NXB - Đại học Quốc gia TPHCM, ISBN: 978-604-73-6518-0, 2018.</li> </ol>
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1	X	X				
2	X	X				
3		X				
4						X

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Course syllabus and introduction; Logic and propositions	1,2	Questions and answers	Lecture, Discussion, In-class exercises	[1, 2]
2	Logic and propositions (continue)	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2]
3	Propositional Equivalences; predicates and quantifiers	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2]
4	Nested Quantifiers and Methods of Proof	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2]
5	Induction and recursion	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2]
6	Number of theory	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2]
7	Number of theory (continue)	2,3,4	Quiz, Homework,	Lecture, Discussion,	[1, 2]

			Midterm exam	In-class exercises	
8	Counting: part 1, 2; midterm review	2,3,4	Quiz, Homework, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
	<b>Midterm examination</b>				
9	Counting: part 3	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2]
10	Advanced counting	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2]
11	Boolean algebras	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
12	Graph theory	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
13	Optimal problem solving on graphs	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
14	Introduction and application of tree	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
15	Search on tree; review for final exam	2,3,4	Quiz, Homework, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
1	<b>Final examination</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz/Homework/Assignment (25%)	20%	30%	30%	20%
Midterm examination (30%)	25%	25%	25%	25%
Final examination (45%)		30%	40%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

## 5. Rubrics (optional)

### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
	TOTAL SCORE	100	

### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and

	and speaker appears polished and confident.	and speaker appears comfortable.	understandable, and speaker appears tentative.	speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Digital Logic Design**

**Course Code: IT067**

### **1. General information**

Course designation	Provide fundamentals of logic design, such as: number presentation and codes, Boolean algebra and basic tools for design with combinational and sequential digital logic.
Semester(s) in which the course is taught	3
Person responsible for the course	Assoc. Prof. Dr. Dinh Duc Anh Vu
Language	English
Relation to curriculum	CS, IT: Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) Private study including examination preparation, specified in hours: 90
Credit points	Number of credits : 3 Lecture: 3 Laboratory: 0
Required and recommended prerequisites for joining the course	
Course objectives	This course is to provide fundamentals of logic design, such as: number presentation and codes, Boolean algebra and basic tools for design with combinational and sequential digital logic.
Course learning outcomes	CLO 1. Explain the presentation of number, codes systems. CLO 2. Demonstrate the operation of arbitrarily basic combinational and sequential circuits. CLO 3. Design basic combinational and sequential circuits.

	CLO 4. Follow the discussions of instructors and classmates.																					
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Examination forms	Multiple-choice questions, short-answer questions																					
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																					
Reading list	<ol style="list-style-type: none"> <li>Ronald J. Tocci, Neal S.Widmer, Digital Systems Principles and Applications, Prentice Hall Inc (2007)</li> <li>J.F. Wakerly, Digital Design: Principles &amp; Practices 4th, 2004</li> </ol>																					

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO				
CLO	1	2	3	4	5
1	X				
2	X				
3		X			
4	X	X			

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1,2	Number systems, arithmetic and codes	CLO1	Midterm Exam	Reading Group Presentation	Textbooks

3,4,5	Boolean algebra and Logic Gates	CLO1	Midterm Exam	Reading Lecture	Textbooks Lecture notes
	<b>Midterm</b>				
6,7,8	Combinational Circuits	CLO2,CLO4	Quiz Final Exam	Reading Lecture Discuss	Textbooks Lecture notes
9,10,11	Sequential logic and flip-flops	CLO2,CLO4	Exercise Final Exam	Reading Lecture Discuss Exercise	Textbooks Lecture notes
12,13	Arithmetic logic Circuits	CLO3,CLO4	Exercise Final Exam	Reading Lecture Discuss Exercise	Textbooks Lecture notes
14,15	Counters, stacks and registers	CLO3,CLO4	Exercise Final Exam	Reading Lecture Discuss Exercise	Textbooks Lecture notes
	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Midterm examination (30%)	30%			
Final examination (40%)		20%	20%	
Exercises/ Quiz (30%)		10%	10%	10%

Note: %Pass: Target that 90% of students having scores greater than 50 out of 100.

- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		

Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>			<b>Benchmark</b>
		<b>4</b>	<b>3</b>	<b>2</b>	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Digital Logic Design Lab**

**Course Code: IT099**

### **1. General information**

Course designation	This subject covers the fundamental knowledge of digital logic design laboratory
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Ly Tu Nga
Language	English
Relation to curriculum	Compulsory (CS, NE, CE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 60 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 30 (laboratory) Private study including examination preparation, specified in hours: 30
Credit points	Number of credits : 1 Lecture: 0 Laboratory: 1
Required and recommended prerequisites for joining the course	Digital Logic Design
Course objectives	This course provides students the fundamentals of digital logic design concepts, a sequence of laboratory experiments to present and illustrate theory of digital logic design involving Logic gates, Combinational logic circuit, MSI combinational logic circuit, Flip Flops and Counters, Counter ICs, and Shift register. Students apply contemporary agile requirements analysis, implementation and testing practices to digital logic design project work in small teams.
Course learning outcomes	CLO 1. use laboratory equipment in digital logic design.

	<p>CLO 2. design, construct, analyze, and troubleshoot simple combinational and sequential circuits.</p> <p>CLO 3. measure and record the experimental data, analyze the results, and prepare a laboratory report for submission.</p> <p>CLO 4. Have an opportunity to exam case studies to understand the professional and ethical responsibility as an engineer.</p>																								
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Examination forms	Short-answer questions																								
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions.</p> <p>Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																								
Reading list	<p>[1] M.M. Mano and M.D. Ciletti, Digital Design 4th, 2007</p> <p>[2] J.F. Wakerly, Digital Design: Principles &amp; Practices 4th, 2004</p> <p>[3] R.J Tocci and N.S. Widner, Digital Systems - Principles and Applications 8th, 2001</p>																								

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	✓	✓				
2	✓	✓				
3			✓			✓
4			✓			✓

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Teaching and Learning activities	Assessments	Resources
1	Logic gates and combinational logic	CLO 1,3	-Practice and demo -Class discussion	-Report	[1,2]
2	MSI combinational logic	CLO 2,3	-Practice and demo -Class discussion	-Report	[1,2]
3	MSI Combinational logic (cont.)	CLO 2,3	-Practice and demo -Class discussion	-Report	[1,2]
5	Flip flops and counters	CLO 2,3,4	-Practice and demo -Class discussion	-Report	[1,3]
6	Counter ICs (part I)	CLO 2,3,4	-Practice and demo -Class discussion	-Report	[1,3]
7	Counter ICs (part II)	CLO 2,3,4	-Practice and demo -Class discussion	-Report	[1,3]
8	Shift Register	CLO 2,3,4	-Practice and demo -Class discussion	-Report	[1,3]
9	<b>Final exam</b>		Practice	Written exam	

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Final examination (30%)	30%	30%	30%	30%
Exercises/ Quiz (70%)	70%	70%	70%	70%

1. When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
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Distinct introduction, body, conclusions	5		

Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
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Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

**Critical thinking value rubric for evaluating questions in exams:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

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Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

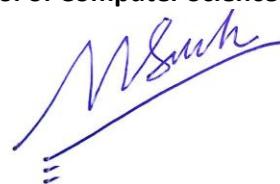
	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
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*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Algorithms and Data Structure**

**Course Code: IT013**

### **1. General information**

Course designation	This subject introduces students to basic data structures and algorithms
Semester(s) in which the course is taught	4,6
Person responsible for the course	Dr. Tran Thanh Tung
Language	English
Relation to curriculum	Compulsory (All programs)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Object-Oriented Programming
Course objectives	Introduction to data structures and algorithms, including their design, analysis, and implementation.
Course learning outcomes	CLO 1. Understand basic data structures and algorithms CLO 2. Analyze and evaluate data structures and algorithms. CLO 3. Design algorithms and select data structures for real world applications.

		<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																																																						
Knowledge			CLO1																																																						
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	XX					

2		XXX				
3						X

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Review OOP & Java	1	Quiz	Lecture	
2	Arrays	1	Lab, Quiz, Midterm	Lecture, Discussion, In class exercises	[1,3]
3	Complexity	2	Quiz	Lecture, Discussion	[2]
4	Sorting	1,2	Lab, Quiz, Midterm	Lecture, Discussion, In class exercises	[1,3]
5	Queue, Stack	2,3	Lab, Quiz, Midterm	Lecture, Discussion, In class exercises	[1,3]
6	List part 1	1,2	Lab, Quiz, Midterm	Lecture, Discussion, In class exercises	[1,3]
7	List part 2	2,3	Lab, Quiz, Midterm	Lecture, Discussion	
8	Recursion	2,3	Lab, Quiz, Midterm	Lecture, Discussion, In class exercises	[1,3]
<b>9</b>	<b>Midterm</b>				
10	Advanced Sorting part 1	1,2	Lab, Quiz, Final	Lecture, Discussion, In class exercises	[1,3]
11	Advanced Sorting part 2	2,3	Lab, Quiz, Final	Lecture, Discussion	[1,2,3]
12	Binary Tree	1,2	Lab, Quiz, Final	Lecture, Discussion, In class exercises	[1,3]
13	Hash Table	2,3	Lab, Quiz, Final	Lecture, Discussion	[1,3]
14	Graphs	1,2	Lab, Quiz, Final	Lecture, Discussion, In class exercises	[2,3]
15	Algorithms on graphs	2,3	Lab, Quiz, Final	Lecture, Discussion	[2,3]
16	<b>Final exam</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quiz (5%)	20%	5%	
Labs (10%)		10%	
Midterm examination (30%)	40%	30%	30%
Projects/Presentations/Report (15%)		15%	40%
Final examination (40%)	40%	40%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

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## Rubrics (optional)

### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>			
100			

### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

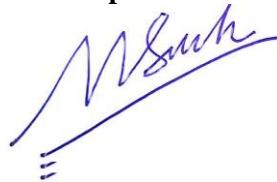
	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and

	and speaker appears polished and confident.	and speaker appears comfortable.	understandable, and speaker appears tentative.	speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Principles of Database Management**

**Course Code: IT079**

### **1. General information**

Course designation	This course focuses on the design and implementation of database management systems
Semester(s) in which the course is taught	4
Person responsible for the course	Assoc. Prof. Dr. Nguyen Thi Thuy Loan
Language	English
Relation to curriculum	Compulsory (NE, CS, DS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	IT116IU (C Programming)
Course objectives	This subject introduces the students to basic database design and implementation concepts. Database design techniques, including relational design and E-R analysis, are presented. Database queries using SQL are covered in lectures and supported by practical exercises.
Course learning outcomes	CLO 1. Produce an (Extended) Entity-Relationship (E-R) model from specifications. CLO 2. Apply data normalization principles to transforming an ER model into a database schema.

	CLO 3. Construct efficient SQL queries to retrieve and manipulate data as required.																											
	<table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO2, CLO3</td></tr> <tr> <td>Attitude</td><td>CLO3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO2, CLO3	Attitude	CLO3																			
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Review	3	I, U																										
Examination forms	Multiple-choice questions, short-answer questions																											
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																											
Reading list	<ol style="list-style-type: none"> <li>1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, Database System Concept 7th, 2020</li> <li>2. Jeffrey A. Hoffer, Ramesh Venkataraman, Heikki Topi, Modern Database Management 13th, 2019</li> <li>3. Ramez Elmasri, Shamkant Navathe, Fundamentals of Database Systems 7th, 2016</li> </ol>																											

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	XXX					
2		XXX			X	
3		XX			XX	

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Database Systems	1	Quiz	Lecture	[1,3]
2	Relational Model and relational Algebra	2	Quiz, Midterm, Project	Lecture, Discussion, In-class, exercise	[1,3]
3	Structured Query Language	3	Quiz, Lab, Project, Midterm	Lecture, Discussion, In-class, exercise	[1,2,3]
4	(Extended) Entity Relationship Model	2	Quiz, Project, Midterm	Lecture, Discussion, In-class, exercise	[1,2,3]
<b>5</b>	<b>Midterm</b>				
6	Relational Database Design	2,3	Project, Final, Quiz, Lab	Lecture, Discussion, In-class, exercise	[1,2]
7	Normalization	2,3	Quiz, Project, Final	Lecture, Discussion, In-class, exercise	[2,3]
8	Advanced SQL	3	Quiz, Project, Final	Lecture, Discussion, In-class, exercise	[1,3]
9	Review	2,3	Quiz	Discussion, In-class, exercise	[1,2,3]
<b>10</b>	<b>Final exam</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Labs (10%)		10%	20%
Midterm examination (25%)	40%		20%
Quiz (5%)	10%	20%	
Projects/Presentations/ Report (20%)	30%	20%	30%
Final examination (40%)	20%	50%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		

Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.

<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Computer Architecture**

**Course Code: IT089**

### **1. General information**

Course designation	This course introduces the principles of computer organization and the basic computer architecture.
Semester(s) in which the course is taught	4
Person responsible for the course	Dr. Le Hai Duong
Language	English
Relation to curriculum	Compulsory (CS, NE, CE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120 Student responsibility: Students are expected to spend at least 8 hours per week for self – studying. This time should be made up of reading, working on exercises and problems and group assignment.
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Digital Logic Design
Course objectives	This course provides students the principles of computer architecture and organization. It covers the subjects on assembly language and machine code, computer arithmetic and ALU design, computer performance, datapath and control, pipelining, memory hierarchy, I/O devices, multi-processor architectures, and mobile and multi-core processors.

Course learning outcomes	<p>CLO 1. Understand the principles of computer architecture and the interfaces between its hardware and software components;</p> <p>CLO 2. Understand computer arithmetic (both integer and floating point), datapath, control , pipelining, pipeline hazards and their remedies, computer buses and I/O peripherals, and multiprocessor architecture;</p> <p>CLO 3. Create assembly programs and their machine code equivalent;</p> <p>CLO 4. Analyze the performance of computer;</p> <p>CLO 5. Analyze computer memory and its organization, especially the interaction between cache and main memory.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1, CLO2</td></tr> <tr> <td>Skill</td><td>CLO3, CLO4, CLO5</td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2	Skill	CLO3, CLO4, CLO5	Attitude																							
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Computer performance	1	T, U																													
Datapath and its control	2	T																													
Microprocessor pipelining	2	T, U																													
Memory hierarchy	1	T																													
I/O devices and buses	1	T																													
Multiprocessor	1	T																													
Examination forms	Multiple-choice questions, short-answer questions																														
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																														
Reading list	<p>1. David A. Patterson and John L. Hennessy, Computer Organization and Design 5th, 2013</p>																														

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-5) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X					
2	X					
3		X				X
4	X					
5	X					

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	History of computers, relations of software and hardware components;	1	Quiz, exam	Lecture	[1]
2	Assembly language instructions	3	Quiz, exam	Lecture, lab, exercises	[1]
3	Computer arithmetic principles and hardware design	2	Quiz, exam	Lecture, exercises	[1]
<b>4</b>	<b>Midterm</b>				
5	Computer performance	4	Quiz, exam	Lecture, exercises	[1]
6	Datapath and its control	1, 2	Quiz, exam	Lecture, exercises	[1]
7	Microprocessor pipelining		Quiz, exam	Lecture, exercises	[1]
8	Memory hierarchy	5	Quiz, exam	Lecture, exercises	[1]
9	I/O devices and buses	2	Quiz, exam	Lecture, exercises	[1]
10	Multiprocessor	2	Quiz, exam	Lecture, exercises	[1]
11	<b>Final exam</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Midterm examination (30%)	70%	70%	25%		
Final examination (40%)			50%	70%	70%
Exercises/ Quiz (30%)	30%	30%	25%	30%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- 
- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.[←](#)

## Rubrics (optional)

### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
		TOTAL SCORE	100

### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and

	and speaker appears polished and confident.	and speaker appears comfortable.	understandable, and speaker appears tentative.	speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Computer Networks**

**Course Code: IT091**

### **1. General information**

Course designation	This subject covers the fundamental knowledge of computer networks
Semester(s) in which the course is taught	3,5
Person responsible for the course	Assoc. Prof. Vo Thi Luu Phuong.
Language	English
Relation to curriculum	Compulsory (CS, NE, CE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	None
Course objectives	This course covers the fundamental knowledge of computer networks such as OSI, TCP/IP models, network architectures, LAN, WAN, the typical network protocols. The students will also study to design, implement and monitor a small / medium scale network.
Course learning outcomes	CLO 1. Analyze the components, architecture, and protocols in computer networks; CLO 2. Apply the theory in designing a small/medium computer networks; CLO 3. Show the ability to work in teams;

		<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																													
Knowledge	CLO1																															
Skill	CLO2, CLO3																															
Attitude	CLO2																															
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th><b>Topic</b></th> <th><b>Weight</b></th> <th><b>Level</b></th> </tr> </thead> <tbody> <tr> <td>Introduction of computer networks</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>Network applications: HTTP, FTP, DNS, SMTP</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>Transport layer: congestion control, TCP, UDP</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>IP addressing, CIDR, VLSM</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>Network layer: routing algorithms, routing protocols</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>Datalink layer and physical layer</td> <td>2</td> <td>T, U</td> </tr> <tr> <td>Wireless and mobile networks</td> <td>2</td> <td>T</td> </tr> <tr> <td>Some advanced topics in contemporary networks</td> <td>1</td> <td>U</td> </tr> </tbody> </table>					<b>Topic</b>	<b>Weight</b>	<b>Level</b>	Introduction of computer networks	2	T, U	Network applications: HTTP, FTP, DNS, SMTP	2	T, U	Transport layer: congestion control, TCP, UDP	2	T, U	IP addressing, CIDR, VLSM	2	T, U	Network layer: routing algorithms, routing protocols	2	T, U	Datalink layer and physical layer	2	T, U	Wireless and mobile networks	2	T	Some advanced topics in contemporary networks	1	U
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Some advanced topics in contemporary networks	1	U																														
Examination forms	Multiple-choice questions, short-answer questions																															
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																															
Reading list	1. J. F. Kurose and K. W. Ross, Computer Networking: A Top Down Approach 7th, 2014																															

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	✓✓					
2		✓✓✓				
3					✓	

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	Introduction of computer networks	1	Midterm	lecture	Chapter 1, [1]
3-4	Network applications: HTTP, FTP, DNS, SMTP	1	Midterm, Lab	lecture, lab	Chapter 2, [1]

5-6	Transport layer: congestion control, TCP, UDP	1	Midterm, Lab	lecture, lab	Chapter 3, [1]
	<b>Midterm</b>				
7-8	IP addressing, CIDR, VLSM	2	Final, Lab	lecture, lab	Chapter 4, [1]
9-10	Network layer: routing algorithms, routing protocols	1,2	Final, Lab	lecture, lab	Chapter 5, [1]
11-12	Datalink layer and physical layer	1,2	Final, Lab	lecture, lab	Chapter 6, [1]
13-14	Wireless and mobile networks	1	Final	lecture	Chapter 7, [1]
15	Some advanced topics in contemporary networks	3	Group project	group work	Literature
10	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Exercises, quizzes, attendants (10%)	30%		30%
Group project (5%)		30%	40%
Labs (25%)		30%	30%
Midterm examination (30%)	40%		
Final examination (30%)	30%	40%	

1. When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
<b>Technical content (60%)</b>		Max.	Score	Comments
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		
Summary and conclusions appropriate and complete		5		
<b>Organization (10%)</b>				
Distinct introduction, body, conclusions		5		
Content clearly and logically organized, good transitions		5		

<b>Presentation (20%)</b>				
Correct spelling, grammar, and syntax		10		
Clear and easy to read		10		
<b>Quality of Layout and Graphics (10%)</b>		10		
<b>TOTAL SCORE</b>		100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>			<b>Benchmark</b>
		<b>4</b>	<b>3</b>	<b>2</b>	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Object-Oriented Programming**

**Course Code: IT069**

### 1. General information

Course designation	This subject introduces students to the object-oriented programming from basic notions to professional principles for designing an object-oriented software.
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Tran Thanh Tung
Language	English
Relation to curriculum	Compulsory (all programs)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Prerequisite course of OOP: C/C++ Programming
Course objectives	Introduction to object-oriented programming and design. Topics include core terminologies and basic design principles of object-oriented programming such as classes, objects, abstraction, encapsulation, inheritance, polymorphism, the SOLID design principles, and design patterns

Course learning outcomes	<p>CLO 1. Explain and use concepts in object-oriented programming including classes, objects, abstraction, encapsulation, inheritance, and polymorphism.</p> <p>CLO 2. Implement an object-oriented solution in JAVA programming language.</p> <p>CLO 3. Analyze design principles and design patterns in object-oriented programming</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO2, <b>CLO3</b></td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO2, <b>CLO3</b>	Attitude																																									
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	XX					
2		XX				X
3		XXX				X

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Java	1	Quiz	Lecture	[1]
2	Introduction to Object-Oriented Programming	1	Quiz	Lecture, Discussion	[1,2]
3	Classes and Objects	2	Quiz, Lab, Midterm	Lecture, Discussion, In-class exercises	[1,2]
4	Inheritance and composition	2	Quiz, Lab, Midterm	Lecture, Discussion, In-class exercises	[1,2]
5	Polymorphism	2	Quiz, Lab, Midterm	Lecture, Discussion, In-class exercises	[1,2]
6	Design with interfaces and abstract classes	2,3	Quiz, Lab, Midterm	Lecture, Discussion, In-class exercises	[1,2]
7	Building Objects	2,3	Quiz, Lab, Midterm	Lecture, Discussion, In-class exercises	[1,2]
8	Exception handling	1,2	Quiz	Lecture	[1]
<b>9</b>	<b>Midterm</b>				
10	Generic classes and methods	2,3	Quiz, Lab, Final	Lecture, Discussion, In-class exercises	[1,2]
11	Introduction to SOLID principles Single responsibility principle	2,3	Quiz, Project, Final	Lecture, Discussion, In-class exercises	[1,3,4]
12	Open/closed principle	2,3	Quiz, Project, Final	Lecture, Discussion,	[1,3,4]

	Lisko substitution principle			In-class exercises	
13	Interface segregation principle Dependency inversion principle	2,3	Quiz, Project, Final	Lecture, Discussion, In-class exercises	[1,3,4]
14	Reusing Designs Through Design Patterns, part 1	2,3	Quiz, Project, Final	Lecture, Discussion, In-class exercises	[1,3,4]
15	Reusing Designs Through Design Patterns, part 2	2,3	Quiz, Project, Final	Lecture, Discussion, In-class exercises	[1,3,4]
16	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quiz (5%)	10%		20%
Labs (10%)	30%	30%	
Midterm examination (30%)	50%	40%	
Projects/Presentations/ Report (15%)	10%		30%
Final examination (40%)		30%	50%

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
		Max.	Score
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work		15	
Analysis and discussion demonstrate good subject mastery		30	
Summary and conclusions appropriate and complete		5	
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions		5	
Content clearly and logically organized, good transitions		5	
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax		10	
Clear and easy to read		10	
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>		100	

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW
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<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh





**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Net-centric Programming**

**Course Code: IT096**

### **1. General information**

Course designation	Advanced programming course with focus on developing network application
Semester(s) in which the course is taught	6
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Compulsory (NE) Elective (CS)
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Computer Networks
Course objectives	Advanced programming with a focus on developing software for networked systems using UNIX as a reference platform. Topics: Programming Tools, Software Design, Programming Techniques, Environment of a UNIX Process, Memory Allocation, Garbage Collection, Process Control, Process Relationships, Signals, Reliable Signals, Threads, I/O Multiplexing, Datagram and Stream Sockets,

	Multicasting, Device Driver and Kernel Programming, Secure Programming																																																
Course learning outcomes	<p>CLO 1. Understand the structure of network applications  CLO 2. Able to develop network applications using TCP and UDP sockets  CLO 3. Understand and implement network applications using popular Internet protocols  CLO 4. Team working</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1, 2, 3</td></tr> <tr> <td>Skill</td><td>2, 3</td></tr> <tr> <td>Attitude</td><td>4</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1, 2, 3	Skill	2, 3	Attitude	4																																								
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Examination forms	Multiple-choice questions, short-answer questions																																																
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																																
Reading list	<ol style="list-style-type: none"> <li>Michael J.Donahoo, Kenneth L.Calvert, TCP/IP Socket in C: A Practical Guide for Programmers 2nd, 2009</li> </ol>																																																

	<p>2. W. R. Stevens, B. Fenner, A. M. Rudoff, Unix Network Programming, Vol. 1: The Sockets Networking API 3rd, 2003</p> <p>3. Brandon Rhodes, Foundations of Python Network Programming 3rd, 2014</p>
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO\SLO	1	2	3	4	5	6
1	x					
2		xx				
3		xxx				
4						x

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Network revisions	1	Quiz	Lecture	2
2	Introduction to Client/Server networking and Socket Programming	2	Quiz, Lab, Midterm	Lecture	1
3	TCP Socket Programming	2	Quiz, Lab, Midterm	Lecture, Discussion	1, 2
4	UDP Socket Programming	2	Quiz, Lab, Midterm	Lecture, Discussion	1, 2
5	Socket name and DNS	2	Quiz, Lab, Midterm	Lecture, Discussion	2, 3
6	Network Data and Network Errors	2	Quiz, Lab, Midterm	Lecture, Discussion	2, 3
7	Caches and Message Queues	2	Quiz, Lab, Midterm	Lecture, Discussion	2, 3
8	HTTP Clients	3, 4	Quiz, Lab, Final	Lecture, Discussion	2, 3
<b>Midterm exam</b>					
9	HTTP Server	3, 4	Quiz, Lab, Final	Lecture, Discussion	2, 3
10	Web Socket, Web Frame Work	3, 4	Quiz, Final	Lecture, Discussion	2, 3
11	Web Scraping	3, 4	Quiz, Final	Lecture, Discussion	2, 3
12	Building and Parsing Email	3	Quiz, Final	Lecture, Discussion	2, 3
13	FTP	3	Quiz, Final	Lecture, Discussion	2, 3
14	Telnet and SSH	3	Quiz, Final	Lecture, Discussion	2, 3
15	Remote Procedure Call (RPC)	3	Quiz, Final	Lecture, Discussion	2, 3
<b>Final exam</b>					

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz / Assignment (10%)		10%	10%	100%
Labs (20%)	30%	30%	40%	
Midterm examination (30%)	70%	40%		
Final examination (40%)		20%	50%	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- 
- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.

1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone		Benchmark
	4	3	2	1

<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Information System Management**

**Course Code: IT094**

### **1. General information**

Course designation	This course covers the concepts of information systems and their applications to business processes
Semester(s) in which the course is taught	6
Person responsible for the course	Dr. Tran Thanh Tung
Language	English
Relation to curriculum	Elective course (CS, DS) Specialization (required) (NE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Principles of Database Management
Course objectives	This course will aim to provide students with: The concepts of information systems and their applications to business processes. Use of computer-based information systems in functional areas of business. Understanding of computer and information technology, resources, management and end-user decision making, and system development.

Course learning outcomes	<p>CLO 1. understand basic information system concepts as applied to business operations and management.</p> <p>CLO 2. identify the major components of a computer system, including hardware, software, operating systems and operating environments as they apply to information systems.</p> <p>CLO 3. develop basic MIS applications such as spreadsheet, database, and web development.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td></td></tr> <tr> <td>Skill</td><td></td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge		Skill		Attitude																													
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Reading list	<ol style="list-style-type: none"> <li>1. Kenneth C. Laudon, Jane P. Laudon, Management Information Systems: Managing the Digital Firm 14th, 2016</li> <li>2. Kenneth C. Laudon and Jane Laudon, Essentials of Management Information Systems 11th, 2015</li> </ol>																																				

## **2. Learning Outcomes Matrix**

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1		x		x		
2		x		x		
3		x				

## **3. Planned learning activities and teaching methods**

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Information Systems in Global Business;	1	Midterm exam	In-class activities	
2	Global E-Business and Collaboration;	1	Midterm exam	In-class activities	
3	Information Systems, Organizations and Strategy	1,2	Midterm exam, Quiz	In-class activities, Lab	
4	Ethical and Social Issues in Information Systems;	1	Midterm exam		
5	Telecommunications, the Internet, and Wireless Technology;	2	Midterm exam	In-class activities, Lab	
<b>6</b>	<b>Midterm</b>				
7	Foundations of Business Intelligence: Databases and Information Management	2,3	Final exam	In-class activities, Lab	
8	E-Commerce: Digital Markets, Digital Goods;	1	Final exam	In-class activities, Lab	
9	Achieving Operational Excellence and Customer Intimacy: Enterprise Applications;	1	Final exam	In-class activities, Lab	
10	Building Information Systems;	2,3	Final exam	In-class activities, Lab	
11	Managing Knowledge;	1	Final exam		
12	Enhancing Decision Making.	1	Final exam		
13	<b>Final exam</b>				

#### 4. Assessment plan

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

Assessment Type	CLO1	CLO2	CLO3
Midterm examination (30%)	40%	30%	20%
Projects/Presentations/ Report (20%)		40%	60%
Final examination (40%)	30%	20%	20%
Exercises/ Quiz (20%)	30%	10%	

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.

2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
		4	3	2
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
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<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Operating Systems**

**Course Code: IT017**

### **1. General information**

Course designation	This course covers fundamental concepts of operating systems including scheduling, virtual memory and file systems.
Semester(s) in which the course is taught	5,7
Person responsible for the course	Dr. Le Hai Duong
Language	English
Relation to curriculum	Compulsory (NE, CE, CS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120 Student responsibility: Students are expected to spend at least 8 hours per week for self – studying. This time should be made up of reading, working on exercises and problems and group assignment.
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Algorithms and Data Structure Computer Architecture
Course objectives	This course presents the theory, design, implementation, and analysis of computer operating systems. Through classroom lectures, labs, projects and exercises, students learn the fundamentals of concurrency and process management, inter-process communication and synchronization, memory management, job scheduling algorithms, input/output management, file

	systems, security in operating systems. Course labs use the C/C++ language and include the design and implementation of portions of an operating system.																																	
Course learning outcomes	<p>CLO 1. Understand processes and process management  CLO 2. Understand synchronization and communication  CLO 3. Understand memory management  CLO 4. Given a scheduling algorithm, determine timeline of actions  CLO 5. Understand internals of file system  CLO 6. Design and implement portions of an operating system</p> <table border="1"> <thead> <tr> <th>Competency level</th> <th>Course learning outcome (CLO)</th> </tr> </thead> <tbody> <tr> <td>Knowledge</td> <td>CLO1, CLO2, CLO3, CLO4, CLO5</td> </tr> <tr> <td>Skill</td> <td>CLO6</td> </tr> <tr> <td>Attitude</td> <td></td> </tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2, CLO3, CLO4, CLO5	Skill	CLO6	Attitude																										
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Reading list	<ol style="list-style-type: none"> <li>W. Stallin, Operating Systems: Internals and design principles 7th, 2011</li> <li>A.S. Tanenbaum, Modern Operating Systems 3rd, 2008</li> </ol>																																	

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-6) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X					
2	X					
3	X					
4		X				
5	X					
6		X				

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction, processes, process management	1	Quiz, exam	Lecture, exercises, lab	[1], [2]
2	Threads	1	Quiz, exam	Lecture, exercises, lab	[1], [2]
3	Inter-process communication (IPC) and synchronization, deadlocks	2	Quiz, exam	Lecture, exercises, lab	[1], [2]
4	Memory management	3	Quiz, exam	Lecture, exercises, lab	[1], [2]
<b>5</b>	<b>Midterm</b>				
6	process scheduling	4	Quiz, exam	Lecture, exercises, lab	[1], [2]
7	Input/output and disk management	5	Quiz, exam	Lecture, exercises, lab	[1], [2]
8	File systems	5	Quiz, exam	Lecture, exercises, lab	[1], [2]
9	Security in operating systems	6	Quiz, exam	Lecture, exercises, lab	[1], [2]
10	Embedded operating systems	6	Quiz, exam	Lecture, exercises, lab	[1], [2]
11	Distributed system issues	6	Quiz, exam	Lecture, exercises, lab	[1], [2]
12	<b>Final exam</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Midterm examination (30%)	10%	10%	10%			
Projects/Presentations/ Report (20%)	3%	3%		4%		10%
Final examination (40%)			18%	17%	15%	
Exercises/ Quiz (10%)	2%	2%	2%	2%	2%	

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
			Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

#### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

#### 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark
	4	3	2

<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
**INTERNATIONAL UNIVERSITY**  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Web Application Development**

**Course Code: IT093**

### 1. General information

Course designation	This subject introduces to students the development of web application. How to design and program a web-app in practice based on the tools, techniques and web frameworks
Semester(s) in which the course is taught	6
Person responsible for the course	Assoc. Prof. Nguyen Van Sinh
Language	English
Relation to curriculum	Compulsory (NE, CE, CS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Object-Oriented Programming Principles of Database Management
Course objectives	This course provides students the fundamentals of web design and web programming. It provide the concepts and models of HTML, Java Server Page, Java Bean, MVC model, Java utilities and development environments, extended Java frameworks, several new frameworks with different programming languages. To develop skills in understanding and evaluating web-based systems, as well as to develop skills in designing and developing web-based applications.

Course learning outcomes	<p>CLO 1. Understand web design, web programming concepts and models.</p> <p>CLO 2. Apply to design and develop static/dynamic web application with HTML, Java Server Pages, Java Bean, extended Java and other frameworks based on the MVC model.</p> <p>CLO 3. Apply knowledge and ability to manage and use Java, XML utilities and IDE for developing web applications with DBMS.</p> <p>CLO 4: work in group, communication, interaction and responsible within a team.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO2, CLO3</td></tr> <tr> <td>Attitude</td><td>CLO4</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO2, CLO3	Attitude	CLO4																																		
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Attitude	CLO4																																										
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 teaching hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Week 1: Introduction to the course and HTML</td><td>3</td><td>I,T</td></tr> <tr> <td>Week 2: Advanced HTML and CSS</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 3: Introduction to J2EE and new frameworks in web application</td><td>3</td><td>I,T</td></tr> <tr> <td>Week 4 : Servlet</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 5: Java server page and JDBC</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 6: Java Bean and MVC</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 7: Web state, session, cookies &amp; midterm review</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 8: Java Script, APIs and Libraries</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 9&amp;10: Node JS Framework</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 11: Graphical models on the webpage, web multimedia and web 360</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 12&amp;13: XML &amp; XSLT</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 14: Ajax framework</td><td>3</td><td>I,T,U</td></tr> <tr> <td>Week 15: the existing web frameworks &amp; final review</td><td>3</td><td>I,T,U</td></tr> </tbody> </table>	Topic	Weight	Level	Week 1: Introduction to the course and HTML	3	I,T	Week 2: Advanced HTML and CSS	3	I,T,U	Week 3: Introduction to J2EE and new frameworks in web application	3	I,T	Week 4 : Servlet	3	I,T,U	Week 5: Java server page and JDBC	3	I,T,U	Week 6: Java Bean and MVC	3	I,T,U	Week 7: Web state, session, cookies & midterm review	3	I,T,U	Week 8: Java Script, APIs and Libraries	3	I,T,U	Week 9&10: Node JS Framework	3	I,T,U	Week 11: Graphical models on the webpage, web multimedia and web 360	3	I,T,U	Week 12&13: XML & XSLT	3	I,T,U	Week 14: Ajax framework	3	I,T,U	Week 15: the existing web frameworks & final review	3	I,T,U
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Week 15: the existing web frameworks & final review	3	I,T,U																																									
Examination forms	Multiple-choice questions, short-answer questions and programming																																										
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																										
Reading list	<ol style="list-style-type: none"> <li>1. Dave Wolf and A.J. Henley. "Java EE Web Application Primer Building Bullhorn: A Messaging App with JSP, Servlets, JavaScript, Bootstrap and Oracle", 2017.</li> </ol>																																										

	<p>2. Prem Kumar Karunakaran. “Java Web Application Development”, second edition, 2020.</p> <p>3. Laura Ubelhor and Christian Hur. “Developing Business Application for the Web With HTML, CSS, JSP, PHP, ASP.NET and JavaScript”, 2017.</p> <p>4. <i>Refer VN book: N.V.Sinh, N.T.T.Sang, T.M.Hà</i> “Xây dựng ứng dụng Web cho Thương mại điện tử trên Netbeans”, Nhà xuất bản Xây dựng 2017</p>
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X	X				
2		X				
3		X				X
4					X	

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to the course and HTML	1	Quiz	Lecture,	[1,2]
2	Advanced HTML and CSS	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3]
3	Introduction to J2EE and new frameworks in web application	1	Quiz, Midterm	Lecture, Discussion	[1,2]
4	Servlet	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
5	Java server page and JDBC	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
6	Java Bean and MVC	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
7	Web state, session, cookies & midterm review	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
8	Java Script, APIs and Libraries & midterm review	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
9	Node JS Framework	2,3	Quiz, Lab	Lecture,	[1,2,3,4]

				Discussion, In-class exercises	
10	Node JS Framework (continue)	2,3	Quiz, Lab	Lecture, Discussion, In-class exercises	[1,2,3,4]
11	Graphical models on the webpage, web multimedia and web 360	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
12	XML & XSLT	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
13	XML & XSLT (continue)	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
14	Ajax framework	2,3	Quiz, Lab	Lecture, Discussion, In-class exercises	[1,2,3,4]
15	Existing web frameworks & final review	2,3	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1,2,3,4]
16	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Labs (20%)		30%	40%	30%
Midterm examination (30%)	40\$	60%		
Exercises/Quiz (10%)	30%	40%	30%	
Final examination (40%)		50%	50%	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		
Summary and conclusions appropriate and complete		5		
<b>Organization (10%)</b>				

Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone			<b>Benchmark</b>
		4	3	2	
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.	
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.	
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.	

<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

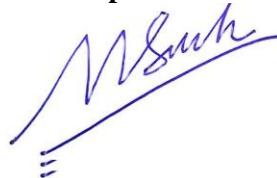
#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone			Benchmark
		4	3	2	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: System and Network Security**

**Course Code: IT117**

### **1. General information**

Course designation	This course introduces students to the fundamentals of computer security including software security, cryptography, network security and web security.
Semester(s) in which the course is taught	7,9
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Elective (CE) Compulsory (NE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Computer Networks
Course objectives	This course introduces students to cryptography systems (symmetric and public key encryptions), basic information theory, authentication and authorization, database security, malicious software, denial of service attacks, intrusion detection and prevention systems, firewalls, buffer overflow attack and software security, Internet security protocols and standards, Internet authentication applications, and wireless security.

Course learning outcomes	<p>CLO 1. Gain understanding of the cryptography concepts including symmetric key encryption, hash function, message authentication code, public key encryption, digital signature and digital envelope;</p> <p>CLO 2. Apply the concepts of authentication and authorization in implementing secure systems and networks;</p> <p>CLO 3. Understand and categorize the malicious software and their attacking mechanisms;</p> <p>CLO 4. Explore the buffer overflow attacks and fuzzing to find software vulnerabilities, and obtain the knowledge of software and operating system security;</p> <p>CLO 5. Understand and practice Internet security protocols and authentication applications;</p> <p>CLO 6. Analyze the wireless security.</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1, CLO2, CLO3, CLO5</td></tr> <tr> <td>Skill</td><td>CLO4, CLO6</td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2, CLO3, CLO5	Skill	CLO4, CLO6	Attitude																													
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Reading list	<p>1. William Stallings and Lawrence Brown, Computer Security - Principles and Practice 3rd, 2015</p>																																				

## **2. Learning Outcomes Matrix**

The relationship between Course Learning Outcomes (CLO) (1-6) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X		X	X		
2		X				
3	X					
4	X					
5	X					
6	X					

## **3. Planned learning activities and teaching methods**

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Cryptographic systems (symmetric and public key systems);	1	Quiz, Exam	Lecture, Exercises, Lab	[1]
2	Authentication and authorization;	2	Quiz, Exam	Lecture, Lab	[1]
3	Malicious software;	3	Quiz, Exam	Lecture, Lab	[1]
4	Database and cloud security;	3	Quiz, Exam	Lecture, Lab	[1]
5	Denial of service attacks;	3	Quiz, Exam	Lecture	[1]
<b>6</b>	<b>Midterm</b>				
7	Intrusion detection and prevention systems, firewalls;	2	Quiz, Exam	Lecture	[1]
8	Buffer overflow and software security;	4	Quiz, Exam	Lecture, Lab	[1]
9	Operating system security;	4	Quiz, Exam	Lecture, Lab	[1]
10	Internet security protocols;	5	Quiz, Exam	Lecture, Exercises,	[1]
11	Internet authentication applications;	5	Quiz, Exam	Lecture, Exercises,	[1]
12	Wireless security.	6	Quiz, Exam	Lecture, Lab	[1]
13	<b>Final exam</b>				

## **4. Assessment plan**

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
-----------------	------	------	------	------	------	------

Midterm examination (30%)	70%	80%	55%			
Final examination (40%)				75%	70%	75%
Exercises/ Quiz (30%)	30%	20%	45%	25%	30%	25%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Max.	Score
Date: .....	Evaluator: .....		
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>		100	

#### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone	Benchmark	
	4	3	2	1

<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: System and Network Administration**

**Course Code: IT125**

### 1. General information

Course designation	Introduce new networking technologies, covering network topologies, deployment concepts, protocols, and system and management techniques
Semester(s) in which the course is taught	5
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Compulsory (NE)
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Computer Networks
Course objectives	Introduce new networking technologies, covering network topologies, example deployment concepts, protocols, and management techniques. Explains the different elements and technologies that are used in enterprise network and how they relate to each other. Focus on fundamental concepts and principles. Provides a solid technical foundation to successfully navigate network management topics and apply those concepts to particular situations.

Course learning outcomes	<p>CLO 1. Understand key elements and services of networked systems in enterprise environments  CLO 2. Understand the technologies used in enterprise networks and how they related to each other  CLO 3. Understand the role and responsibility of system administrator</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1, 2, 3</td></tr> <tr> <td>Skill</td><td>2</td></tr> <tr> <td>Attitude</td><td>3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1, 2, 3	Skill	2	Attitude	3																																								
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Reading list	<ol style="list-style-type: none"> <li>1. Thomas Limoncelli, Practice of System and Network Administration, Volume 1, 2016</li> <li>2. Alexander Clemm, Network Management Fundamentals 1st, 2006</li> </ol>																																																

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO\SLO	1	2	3	4	5	6
1	xxx					
2	xxx					
3			x	xxx		

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to system and network administration	3	Quiz	Lecture	1, 2
2	System element: Workstations	1, 2	Quiz, Midterm	Lecture	1
3	System element: Servers	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
4	Server strategies	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
5	Enterprise Services	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
6	Data center	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
7	Networks	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
8	Disaster Recovery and Data Integrity	1, 2	Quiz, Lab, Midterm	Lecture, Discussion	1
<b>Midterm exam</b>					
9	Security Policy	1, 2	Quiz, Final	Lecture, Discussion	1
10	Debugging Network Systems	1, 2	Quiz, Final	Lecture, Discussion	1
11	Change Management	1, 2	Quiz, Final	Lecture, Discussion	1
12	Service Conversion	1, 2	Quiz, Final	Lecture, Discussion	1
13	Technical Managers	3	Quiz, Final	Lecture, Discussion	1
14	None Technical Managers	3	Quiz, Final	Lecture, Discussion	1
15	System Administrators	3	Quiz, Final	Lecture, Discussion	1, 2
<b>Final exam</b>					

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Quiz/Assignments (10%)	20%	20%	20%
Lab (20%)	20%	20%	
Midterm examination (30%)	30%	30%	30%
Final examination (40%)	30%	30%	50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

1. When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.

3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

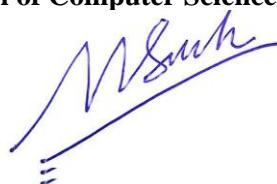
**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Scalable and Distributed Computing**

**Course Code: IT139**

### **1. General information**

Course designation	Fundamental concepts in distributed computing and discuss system designs enabling distributed applications
Semester(s) in which the course is taught	5,7
Person responsible for the course	Assoc. Prof. Vo Thi Luu Phuong
Language	English
Relation to curriculum	Compulsory (NE, DS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Algorithms and Data Structure Fundamentals of Programming or C/C++ Programming
Course objectives	This course presents the theory, design, implementation, and analysis of distributed systems. Through classroom lectures, labs, projects and exercises, students learn the fundamentals of distributed systems, system models, remote procedure call, distributed objects, operating system support, security in distributed systems, distributed file systems, concurrency, transaction and synchronization, replication. The course also covers advanced topics related to cloud and distributed data processing technologies: data partitioning, storage schemes, stream processing, and

	parallel algorithms. Course introduces some modern Internet and cloud computing services running on multiple geographically distributed data centers: Google, Yahoo, Facebook, iTunes, Amazon, eBay, Bing, etc.																																													
Course learning outcomes	<p>CLO 1. Understand the concept and design of distributed systems  CLO 2. Apply distributed data processing models and technologies  CLO 3. Communicate to the team to design the data pipeline that can be integrated with distributed system,  CLO 4. Design and implement components of a scalable and distributed system (millions of users and petabytes of data)</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO 1, CLO 2, CLO 3, CLO 4</td></tr> <tr> <td>Skill</td><td>CLO 2, CLO 4</td></tr> <tr> <td>Attitude</td><td>CLO 3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO 1, CLO 2, CLO 3, CLO 4	Skill	CLO 2, CLO 4	Attitude	CLO 3																																					
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Reading list	<ol style="list-style-type: none"> <li>1. G. Coulouris, J. Dollimore, T. Kindberg, G. Blair, Distributed Systems: Concepts and Design 5th, 2011</li> <li>2. T. White, Hadoop: The Definitive Guide 4th, 2015</li> </ol>																																													

	3. A.S. Tanenbaum, M.V. Steen, Distributed Systems: Principles and Paradigms 2nd, 2007
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1	x					
2	x	x				
3	x	x				x
4		x				x

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Distributed Systems, System Models	1		Lecture, Discussion	[1,2,3] Chapter 1
2	Remote Procedure Call, Distributed Objects	1	Exercises	Lecture, In-class exercises	[1,3] Chapter 2
3	Operating System Support, Distributed File Systems	1	Exercises	Lecture, In-class exercises	[1,3] Chapter 3
4	Transaction and Synchronization	1,2	Labs	Lecture, In-class exercises	[1,3] Chapter 3,4
5	Concurrency Control	1,2	Labs	Lecture, In-class exercises	[1,3] Chapter 5,6
6	<b>Midterm</b>				
7	Security	2,3	Exercises	Lecture, In-class exercises	[1,3] Chapter 6,7
8	Fault and Failure	2,3	Labs	Lecture, In-class exercises	[2] Chapter 5
9	Introduction to MapReduce	2,3	Exercises	Lecture, In-class exercises	[2] Chapter 6,7
10	Scalable K-means algorithms	2,3	Labs	Lecture, In-class exercises	Outside resources
11	Graph and Random-walk algorithms	2,3	Exercises	Lecture, In-class exercises	Outside resources

12	Web services, XML, JSON, Node.js	3,4	Labs	Lecture, In-class exercises	[1,3] Chapter 9,10,11
13	Peer-to-Peer	3,4	Labs	Lecture, In-class exercises	[1,3] Chapter 12
14	Selected seminar 1: Introduce some distributed pipeline in Industry.	4		Discussion	Outside resources
15	Selected seminar 2: Introduce some scalable and distributed products used in Industry.	4		Discussion	Outside resources
16	Revision			Review-test	
17	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Labs (20%)		50%	50%
Midterm examination (30%)	50%	50%	
Final examination (40%)	20%	50%	30%
Exercises/ Quiz (10%)	50%	50%	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

- When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted. ↵

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
<b>Technical content (60%)</b>		Max.	Score
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			

Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

### *Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
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Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone			Benchmark
		4	3	2	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

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**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Fundamental Concepts of Data Security**

**Course Code: IT140**

### 1. General information

Course designation	This course introduces students to cryptographic principals and systems
Semester(s) in which the course is taught	5,7
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Elective (NE) Compulsory (DS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	
Course objectives	This course introduces students to cryptographic principals and systems (symmetric and public key encryptions), and their applications in data security, secure communications, authentication and authorization. These core principles will be applied to the concepts of information risk management, and the analysis and handling of compromised systems. The ethics around computer crime, privacy, and intellectual property are

	covered in detail. Finally, the unit will cover the criteria and controls for information classification.																																				
Course learning outcomes	<p>CLO 1. Gain understanding of the cryptography concepts including symmetric key encryption, hash function, message authentication code, public key encryption, digital signature and digital envelope;</p> <p>CLO 2. Apply the concepts of authentication and authorization in implementing secure systems and networks;</p> <p>CLO 3. Understand and categorize the malicious software and their attacking mechanisms;</p> <p>CLO 4. Explore the buffer overflow attacks and fuzzing to find software vulnerabilities, and obtain the knowledge of software and operating system security;</p> <p>CLO 5. Understand and practice Internet security protocols and authentication applications;</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1, CLO2, CLO3, CLO5</td></tr> <tr> <td>Skill</td><td>CLO4</td></tr> <tr> <td>Attitude</td><td></td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2, CLO3, CLO5	Skill	CLO4	Attitude																													
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Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																				
Reading list	1. William Stallings, Cryptography and Network Security 7th, 2016																																				

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1	X		X	X		
2		X				
3	X					
4	X					
5	X					

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Symmetric-key encipherment (AES, DES)	1	Quiz, Exam	Lecture, Exercises, Lab	[1]
2	Asymmetric-key encipherment (RSA, Diffie-Hellman,...);	1	Quiz, Exam	Lecture, Exercises, Lab	[1]
3	Message integrity and message authentication;	1,2	Quiz, Exam	Lecture, Exercises, Lab	[1]
4	Cryptographic hash function;	1	Quiz, Exam	Lecture, Exercises, Lab	[1]
5	Digital signature;	1	Quiz, Exam	Lecture, Exercises, Lab	[1]
<b>6</b>	<b>Midterm</b>		Quiz, Exam		[1]
7	Entity authentication;	2	Quiz, Exam	Lecture, Exercises, Lab	[1]
8	Security at the application layer: PGP and S/MIME;	5	Quiz, Exam	Lecture, Exercises	[1]
9	Security at the transport layer: SSL and TLS;	5	Quiz, Exam	Lecture, Exercises	[1]
10	Security at network layer: IPSec;	5	Quiz, Exam	Lecture, Exercises	[1]
11	Malicious software;	3,4	Quiz, Exam	Lecture, Exercises, Lab	[1]
12	Database and cloud security;	3,4	Quiz, Exam	Lecture, Exercises, Lab	[1]
13	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Midterm examination (30%)	70%	70%	55%		
Final examination (40%)				75%	70%
Exercises/ Quiz (30%)	30%	30%	45%	25%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.

1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone		Benchmark
	4	3	2	1

<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC**  
**INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Software Engineering**

**Course Code: IT076**

### **1. General information**

Course designation	This course focuses on the design of software by implementing significant projects in teams
Semester(s) in which the course is taught	5, 7
Person responsible for the course	Assoc. Prof. Dr. Nguyen Thi Thuy Loan
Language	English
Relation to curriculum	Compulsory (CS, CE) Elective (NE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	IT069IU (Object-Oriented Programming)
Course objectives	This course provides students the fundamentals of software engineering concepts, methodologies, and processes. It covers the subjects on software process models, agile development methodologies, requirements engineering and analysis models, software design and implementation methods, test strategies, and software evolution. Students apply contemporary agile requirements analysis, planning, architecture, design, implementation and testing practices to software engineering project work in small teams.
Course learning outcomes	CLO 1. Describe the implement of software development process. CLO 2. Apply the principles and methods of software engineering in practice. CLO3. Practice teamwork skills in a software engineering project.

		<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																															
Knowledge	CLO1																																	
Skill	CLO2, CLO3																																	
Attitude	CLO3																																	
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th><b>Topic</b></th> <th><b>Weight</b></th> <th><b>Level</b></th> </tr> </thead> <tbody> <tr> <td>Software development in practice</td> <td>3</td> <td>I</td> </tr> <tr> <td>Beginning a project</td> <td>3</td> <td>T, U</td> </tr> <tr> <td>Requirements</td> <td>7.5</td> <td>T, U</td> </tr> <tr> <td>The user experience</td> <td>4.5</td> <td>T, U</td> </tr> <tr> <td>System design</td> <td>6</td> <td>T, U</td> </tr> <tr> <td>Program development</td> <td>7.5</td> <td>T, U</td> </tr> <tr> <td>Reliability and testing</td> <td>6</td> <td>T, U</td> </tr> <tr> <td>The business of software development</td> <td>4.5</td> <td>T, U</td> </tr> <tr> <td>Review</td> <td>3</td> <td>I, U</td> </tr> </tbody> </table>				<b>Topic</b>	<b>Weight</b>	<b>Level</b>	Software development in practice	3	I	Beginning a project	3	T, U	Requirements	7.5	T, U	The user experience	4.5	T, U	System design	6	T, U	Program development	7.5	T, U	Reliability and testing	6	T, U	The business of software development	4.5	T, U	Review	3	I, U
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The business of software development	4.5	T, U																																
Review	3	I, U																																
Examination forms	Multiple-choice questions, short-answer questions																																	
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions.</p> <p>Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																	
Reading list	<ol style="list-style-type: none"> <li>1. Ian Sommerville, Software Engineering 10th, 2019.</li> <li>2. Hyrum Wright, Titus Winters, and Tom Manshreck. Software Engineering at Google, 2020</li> <li>3. Hans van Vliet, Software Engineering: Principles and Practice 3rd, 2008</li> </ol>																																	

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1						XXX
2			XX			XXX
3			XX		XXX	

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Software development in practice	1	Quiz	Lecture	[1]

2	Beginning a project	1,3	Quiz, Midterm, Project	Lecture, Discussion, In-class, exercise	[1,3]
3	Requirements	2,3	Quiz, Midterm, Project	Lecture, Discussion, In-class, exercise	[1,2]
4	The user experience	2,3	Quiz, Midterm, Project	Lecture, Discussion, In-class, exercise	[1,2]
5	System design	2,3	Quiz, Midterm, Project	Lecture, Discussion, In-class, exercise	[1,2,3]
6	<b>Midterm</b>				
7	Program development	2,3	Quiz, Final, Project	Lecture, Discussion, In-class, exercise	[1,2,3]
8	Reliability and testing	2,3	Quiz, Final, Project	Lecture, Discussion, In-class, exercise	[1,2,3]
9	The business of software development	2,3	Quiz, Project	Lecture, Discussion, In-class, exercise	[1,2,3]
10	Review	1,3	Quiz	Discussion, In-class, exercise	[1,2]
11	<b>Final exam</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Midterm examination (25%)	30%	20%	
Projects/Presentations/ Report (25%)	30%	30%	60%
Final examination (40%)	30%	40%	
Exercises/ Quiz (10%)	10%	10%	40%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		
Summary and conclusions appropriate and complete		5		
<b>Organization (10%)</b>				
Distinct introduction, body, conclusions		5		

Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

### *Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	<b>Capstone</b>	<b>Milestone</b>			<b>Benchmark</b>
		<b>4</b>	<b>3</b>	<b>2</b>	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.	
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.	
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.	

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: IT Project Management**

**Course Code: IT056**

### **1. General information**

Course designation	This subject introduces to students the process of IT project management; the area of knowledge required and techniques appropriate for successful IT project management.
Semester(s) in which the course is taught	7
Person responsible for the course	Assoc. Prof. Nguyen Van Sinh
Language	English
Relation to curriculum	All programs: Elective course
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Object-Oriented Programming Web application development Software engineering
Course objectives	This course provides students the fundamental IT project management knowledge, with particular emphasis on software products, project management and contemporary issues in the delivery of software solutions to business. It considers plan-driven and agile methodologies, estimating techniques, change management, risk management, and the role of project management in business.

	And it identifies the managerial control and reporting aspects necessary from inception to implementation of a software development project.																																																
Course learning outcomes	<p>CLO 1. Explain the IT project management process;</p> <p>CLO 2. Identify the areas of knowledge required for successful IT project management;</p> <p>CLO 3. Apply techniques appropriate for successful software project management;</p> <p>CLO 4. Communicate effectively to the team and stakeholders; construct project related documentation.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO2, CLO3</td></tr> <tr> <td>Attitude</td><td>CLO4</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO2, CLO3	Attitude	CLO4																																								
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	3. Marchewka, J.T., Information Technology Project Management Providing Measureable Organizational Value 5th, 2016
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1		X				
2		X	X			
3		X				X
4			X		X	

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Orientation & Introduction to the course	1	Question and answer	Lecture,	[1, 2, 3]
2	Introduction to IT project management	1	Question and answer	Lecture, Discussion, In-class exercises	[1, 2, 3]
3	Software project planning	2,3	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
4	Estimation (cost, time, scope)	2,3	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
5	Project Schedules	2,3	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
6	Review process	2,3	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
7	Software Requirement	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
8	Design & Programming	2,3,4	Quiz, Lab, Midterm exam	Lecture, Discussion, In-class exercises	[1, 2, 3]

9	Review for midterm examination	1,2,3		Discussion, In-class exercises	
10	Design and Programming	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
11	Software Testing	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
12	Understanding Change	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
13	Management and Leadership	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
14	Managing an Outsourced Project	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
15	Process Improvement.	2,3,4	Quiz, Lab, Final exam	Lecture, Discussion, In-class exercises	[1, 2, 3]
16	<b>Final examination</b>	2,3,4			

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Midterm examination (30%)	40%	50%		
Projects/Presentations/ Report (20%)		40%	30%	30%
Final examination (40%)			70%	30%
Exercises/ Quiz (10%)	25%	25%	25%	25%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports	
Student: .....	HW/Assignment: .....
Date: .....	Evaluator: .....

	<b>Max.</b>	<b>Score</b>	<b>Comments</b>
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

<b>Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW</b>	
<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	<b>Capstone</b>	<b>Milestone</b>		<b>Benchmark</b>
	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and

	and speaker appears polished and confident.	and speaker appears comfortable.	understandable, and speaker appears tentative.	speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Development and Operations (DevOps)**

**Course Code: IT156IU**

### 1. General information

Course designation	This course is an introduction to DevOps to help students understand its principles and practices. Key concepts and terminology will be covered with real-life case studies, examples and practical exercises. Common and popular tools to achieve DevOps models will be introduced as well.
Semester(s) in which the course is taught	7,8
Person responsible for the course	Tran Thanh Tung, PhD.
Language	English
Relation to curriculum	Elective (NE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	None
Course objectives	This course is an introduction to DevOps to help students understand its principles and practices. Key concepts and terminology will be covered with real-life case studies, example and practical exercises. Common and popular tools to achieve DevOps models will be introduced as well.

Course learning outcomes	<p>CLO 1. Define and discuss the key concepts and principles of DevOps  CLO 2 Explain the benefit of DevOps and continuous delivery  CLO 3 Understand infrastructure automation, build and deployment automation, the transformation to DevOps models  CLO 4. Work with common and popular DevOps tools</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1,2</td></tr> <tr> <td>Skill</td><td>3,4</td></tr> <tr> <td>Attitude</td><td>4</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1,2	Skill	3,4	Attitude	4																															
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Examination forms	Short-answer questions																																							
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																																							

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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	1	2	3	4	5	6
1	x					
2	x					
3		x				
4						x

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to DevOps				
2,3	Introduction to Cloud Computing				
4,5	Linux Basics and Shell Scripting				
6	Versioning and Build Tool				
7	Automation: Continuous Integration, Continuous Deployment				
8	Configuration Management				
<b>Midterm exam</b>					
9,10	Containers, Container vs Virtual Machine				
11	Deployment pipeline				
12	Post production				

13	Disaster recovery				
14	Continuous Monitoring for DevOps				
15	Infrastructure and deployment security				
<b>Final exam</b>					

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz (5%)	10%		20%	20%
Labs (10%)	30%	30%		
Midterm examination (30%)	50%	40%		
Projects/Presentations/ Report (15%)	10%		30%	30%
Final examination (40%)		30%	50%	50%

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW
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<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
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Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
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<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
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Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**

Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
**INTERNATIONAL UNIVERSITY**  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Mobile Application Development**

**Course Code: IT133**

### 1. General information

Course designation	Advanced programming course with focus on mobile environment
Semester(s) in which the course is taught	7
Person responsible for the course	MSc. Le Thanh Son
Language	English
Relation to curriculum	Elective (All programs)
Teaching methods	Lecture
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Object-oriented analysis and design
Course objectives	This course is designed to introduce and familiarize students with programming in the mobile environment: Android platform will be used throughout the course. The course starts with introductions to basic components, concepts, structures of Android applications then move on with common user interface elements, persistent storage, database for mobile etc. Introduction to most common tools and techniques for writing Android application is also included with hands on experience in form of lab exercise programming project.

Course learning outcomes	<p>CLO 1. Understand the structure of mobile application, especially Android application  CLO 2. Understand most common mobile platform user interface, database, services  CLO 3. Able to develop mobile application  CLO 4. Team working</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1</td></tr> <tr> <td>Skill</td><td>2, 3</td></tr> <tr> <td>Attitude</td><td>4</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1	Skill	2, 3	Attitude	4																																								
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Reading list	<ol style="list-style-type: none"> <li>C. Stewart, K. Marsciano, <i>Android Programming: The Big Nerd Ranch Guide</i> 3rd, 2017</li> <li>D. Griffiths, <i>Head First Android Development: A Brain-Friendly Guide</i> 1st, 2015</li> </ol>																																																

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO\SLO	1	2	3	4	5	6
1	x					
2	x					
3		xx				xxx
4			x			xxx

## 3. Planned learning activities and teaching methods

Wee k	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to mobile programming	1	Quiz	Lecture	2
2	Android and Modal View Controller	1	Quiz	Lecture	2
3	Activity Lifecycle	1	Quiz	Lecture	2
4	Adroid SDK Versions and Compatbility	1	Quiz, Lab, Midterm	Lecture, Discussion	2
5	Creating UI: Layout and Widgets	2, 3, 4	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
6	ListFragment	2, 3, 4	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
7	ViewPager	2, 3, 4	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
8	Dialogs	2, 3, 4	Quiz, Lab, Midterm	Lecture, Discussion, In-class Exercise	1
<b>Midterm</b>					
9	MediaPlayer	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
10	Action Bar	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
11	Saving and Loading Local Files	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
12	Context Menu and Contextual Action Mode	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1

13	Taking Pictures and Handling Images	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
14	Intents	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
15	Browsing the Web & WebView	2, 3, 4	Quiz, Lab, Final	Lecture, Discussion, In-class Exercise	1
<b>Final exam</b>					

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Quiz / Assignment (10%)	50%	10%	10%	70%
Labs (20%)	10%	30%	30%	30%
Midterm examination (30%)	30%	30%	30%	
Final examination (40%)	10%	30%	30%	

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

#### Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			Comments
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work		15	
Analysis and discussion demonstrate good subject mastery		30	
Summary and conclusions appropriate and complete		5	
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions		5	
Content clearly and logically organized, good transitions		5	
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax		10	
Clear and easy to read		10	
<b>Quality of Layout and Graphics (10%)</b>		10	
<b>TOTAL SCORE</b>		100	

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW
--

<b>Score</b>	<b>Description</b>
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
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<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

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**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022

**Dean of School of Computer Science and Engineering**

Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Data Mining**

**Course Code: IT160**

### **1. General information**

Course designation	This subject introduces the students to the principles and algorithms of data mining, and the requirements of a data mining process.
Semester(s) in which the course is taught	6,8
Person responsible for the course	Dr. Nguyen Thi Thanh Sang
Language	English
Relation to curriculum	Elective (CS, NE, CE) Compulsory (DS)
Teaching methods	Lecture, lesson, project, laboratory.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Object-Oriented Programming
Course objectives	Students will study data mining concepts and algorithms to solve problems of knowledge discovery. They will be equipped with skills of using recent data mining software for solving practical problems and gain experience of doing independent study and research.
Course learning outcomes	

	<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																																		
	Knowledge	CLO 1. Understand basic contents of data warehousing and data mining. CLO 2. Explain modern algorithms in the area of data mining and knowledge discovery.																																		
	Skill	CLO 3. Apply data mining techniques to some case studies using existing datasets.																																		
	Attitude	CLO 4. Work in a team to build a data mining process.																																		
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th><b>Topic</b></th><th><b>Weight</b></th><th><b>Level</b></th></tr> </thead> <tbody> <tr> <td>Introduction to Data Mining</td><td>1</td><td>I</td></tr> <tr> <td>Know your data</td><td>1</td><td>T, U</td></tr> <tr> <td>Data preprocessing</td><td>1</td><td>T, U</td></tr> <tr> <td>Data mining knowledge representation</td><td>1</td><td>T, U</td></tr> <tr> <td>Evaluating what's been learned</td><td>1</td><td>T</td></tr> <tr> <td>Data mining algorithms: Classification</td><td>2</td><td>T, U</td></tr> <tr> <td>Mining Frequent Patterns, Association and Correlations: Basic Concept and Methods</td><td>2</td><td>T</td></tr> <tr> <td>Data mining algorithms: Clustering</td><td>2</td><td>T</td></tr> <tr> <td>Classification: Advanced Methods</td><td>1</td><td>T, I</td></tr> <tr> <td>Semantic data mining</td><td>1</td><td>I</td></tr> </tbody> </table>			<b>Topic</b>	<b>Weight</b>	<b>Level</b>	Introduction to Data Mining	1	I	Know your data	1	T, U	Data preprocessing	1	T, U	Data mining knowledge representation	1	T, U	Evaluating what's been learned	1	T	Data mining algorithms: Classification	2	T, U	Mining Frequent Patterns, Association and Correlations: Basic Concept and Methods	2	T	Data mining algorithms: Clustering	2	T	Classification: Advanced Methods	1	T, I	Semantic data mining	1	I
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Reading list	<p>[1] Jiawei Han, Micheline Kamber, <i>Data Mining: Concepts and Techniques</i>, 3<sup>rd</sup> Edition, 2011.</p> <p>[2] Ian H.Witten, Eibe Frank, Mark A. Hall, and Christopher J. Pal, <i>Data Mining: Practical Machine Learning Tools and Techniques</i>, Fourth Edition, Morgan Kaufmann, 2016.</p> <p>[3] A. Lawrynowicz, <i>Semantic Data Mining: An Ontology-based Approach (Studies on the Semantic Web)</i>, IOS Press (April 15, 2017), ISBN-10 1614997454.</p>																																			

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1	x					
2	x					
3						x
4					x	

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Data Mining	1		Lecture, Discussion	[1, 2]. Chapter 1
2	Know your data	1	Quiz.s2	Lecture, In-class quiz	[1]. Chapter 2
3	Data preprocessing	1,4		Lecture, Discussion	[1]. Chapter 3
4	Data mining knowledge representation	1	Quiz.s4	Lecture, In-class quiz	[2]. Chapter 3; Reading [1]. Chapter 4 – Data Warehousing
5	Evaluating what's been learned	1	Quiz.s5	Lecture, In-class quiz	[2]. Chapter 5
6-7	Data mining algorithms: Classification	2,3	Quiz.s6-7	Lecture, In-class quiz	[1]. Chapter 8; [2]. Chapter 4.3
8	Data mining to code	3		Lecture, Discussion	
<b>9</b>	<b>Midterm</b>				
10-11	Mining Frequent Patterns, Association and Correlations: Basic Concept and Methods	2,3,4	Quiz.s10-11	Lecture, In-class quiz	[1]. Chapter 6; [2]. Chapter 4.5
12-13	Data mining algorithms: Clustering	2,3,4	Quiz.s12-13	Lecture, In-class quiz	[1]. Chapter 10; [2]. Chapter 4.8
14	Classification: Advanced Methods	2	Quiz.s14	Lecture, In-class quiz	[1]. Chapter 9
15	Semantic data mining	2		Lecture, Discussion	[3]
16	Revision			Review-test	

**Laboratory**

Week	Lab
5	Introduction to Weka
6	Evaluation
7	Simple classifiers
8	Programming - Pre-processing data
9	More classifiers
10	Putting it all together
11	Programming - Clustering
12	Programming - Sequential pattern discovery

**4. Assessment plan**

Assessment Type	CLO1	CLO2	CLO3	CLO4
Labs (10%)			100%	
Programming (20%)			70%	30%
Midterm examination (30%)	50%	50%		
Final examination (40%)		40%	60%	

**5. Rubrics (optional)****5.1. Grading checklist**

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>		100	

## 5.2. Holistic rubric

**Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW**

Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

**Critical thinking value rubric for evaluating questions in exams:**

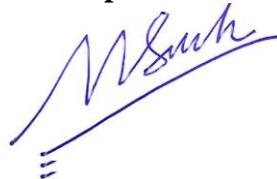
	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.
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*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



VIETNAM NATIONAL UNIVERSITY HCMC  
**INTERNATIONAL UNIVERSITY**  
School of Computer Science and Engineering

## COURSE SYLLABUS

**Course Name: Internet of Things**

**Course Code: IT134**

### 1. General information

Course designation	The course explains the architecture, components of Internet of Thing networks.
Semester(s) in which the course is taught	
Person responsible for the course	Dr. Le Duy Tan
Language	English
Relation to curriculum	Elective (All programs)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Computer Networks
Course objectives	The students will study the communication techniques between the components from short range to long range such as Bluetooth, Zigbee, Wi-fi, Lora, NB-IoT,... Moreover, the data storage, organization and analytics are also studied in this course.
Course learning outcomes	CLO 1. The ability of designing and implementing some Internet of Thing systems; CLO 2. The ability of collecting data then applying some data mining techniques to analyze the data in some IoT applications.

		<b>Competency level</b>	<b>Course learning outcome (CLO)</b>																											
		Knowledge	CLO 1																											
		Skill	CLO 1 and CLO 2																											
		Attitude	CLO 1																											
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th><b>Topic</b></th> <th><b>Weight</b></th> <th><b>Level</b></th> </tr> </thead> <tbody> <tr> <td>Week 1: Introduction to Internet of Things</td> <td>1</td> <td>I</td> </tr> <tr> <td>Week 2 : IoT applications (1st presentation from industry)</td> <td>1</td> <td>U</td> </tr> <tr> <td>Week 3: Sensors and actuators in IoTs</td> <td>1</td> <td>T</td> </tr> <tr> <td>Week 4-8: Communication technologies in IoTs: PAN (Bluetooth, Zigbee), LAN (IEEE 802.11), WAN (LoRa, LTE)</td> <td>5</td> <td>T</td> </tr> <tr> <td>Week 9: Data collection in IoT</td> <td>1</td> <td>T, U</td> </tr> <tr> <td>Week 10: IoT applications (cont.) (2nd presentation from industry)</td> <td>1</td> <td>U</td> </tr> <tr> <td>Week 11-14: Data analytics</td> <td>4</td> <td>T, U</td> </tr> <tr> <td>Week 15: Review</td> <td>1</td> <td>U</td> </tr> </tbody> </table>			<b>Topic</b>	<b>Weight</b>	<b>Level</b>	Week 1: Introduction to Internet of Things	1	I	Week 2 : IoT applications (1st presentation from industry)	1	U	Week 3: Sensors and actuators in IoTs	1	T	Week 4-8: Communication technologies in IoTs: PAN (Bluetooth, Zigbee), LAN (IEEE 802.11), WAN (LoRa, LTE)	5	T	Week 9: Data collection in IoT	1	T, U	Week 10: IoT applications (cont.) (2nd presentation from industry)	1	U	Week 11-14: Data analytics	4	T, U	Week 15: Review	1	U
<b>Topic</b>	<b>Weight</b>	<b>Level</b>																												
Week 1: Introduction to Internet of Things	1	I																												
Week 2 : IoT applications (1st presentation from industry)	1	U																												
Week 3: Sensors and actuators in IoTs	1	T																												
Week 4-8: Communication technologies in IoTs: PAN (Bluetooth, Zigbee), LAN (IEEE 802.11), WAN (LoRa, LTE)	5	T																												
Week 9: Data collection in IoT	1	T, U																												
Week 10: IoT applications (cont.) (2nd presentation from industry)	1	U																												
Week 11-14: Data analytics	4	T, U																												
Week 15: Review	1	U																												
Examination forms	Multiple-choice questions, short-answer questions																													
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																													
Reading list	<p>[1] Raj Kamal, Internet of Things Architecture and Design Principles, Mc Graw Hill India, 2017</p> <p>[2] Hanes, David, et al. IoT fundamentals: Networking technologies, protocols, and use cases for the internet of things. Cisco Press, 2017.</p> <p>[3] Singh, Rajesh, et al. Internet of things with Raspberry Pi and Arduino. CRC Press, 2019.</p>																													

	[4] Dow, Colin. Internet of things programming projects: build modern IoT solutions with the Raspberry Pi 3 and Python. Packt Publishing Ltd, 2018.
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## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1		✓ ✓ ✓			✓ ✓	
2						✓

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Internet of Things	1, 2	Homework	Lecture, Discussion, Inclass-Quiz	[1]
2	IoT applications (1st presentation from industry)	1	Homework	Lecture, Group work	[2]
3	Sensors and actuators in IoTs	1	Homework	Lecture, Discussion, Inclass-Quiz	[1]
4	Midterm		<b>Written exam</b>		
5 - 9	Communication technologies in IoTs: PAN (Bluetooth, Zigbee), LAN (IEEE 802.11), WAN (LoRa, LTE)	1	Homework	Lecture, Discussion, Inclass-Quiz	[1] [2]
10	Data collection in IoT	2	Homework	Lecture, Discussion, Inclass-Quiz	[1]
11	IoT applications (cont.) (2nd presentation from industry)	1, 2	Homework	Lecture, Group work	[2]
12 - 14	Data analytics	2	Homework	Lecture, Discussion, Inclass-Quiz, Presentation	[1]
15	Week 15: Review		Homework	Review-Test	
	<b>Final exam</b>		<b>Written exam</b>		

#### 4. Assessment plan

Assessment Type	CLO1	CLO2
Quiz (5%)		10%
Labs (20%)	20%	20%
Midterm examination (30%)	30%	20%
Projects/Presentations/ Report (5%)	25%	
Final examination (40%)	25%	50%

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: ..... HW/Assignment: .....	Date: ..... Evaluator: .....	Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content	10			
Introduction demonstrates thorough knowledge of relevant background and prior work	15			
Analysis and discussion demonstrate good subject mastery	30			
Summary and conclusions appropriate and complete	5			
<b>Organization (10%)</b>				
Distinct introduction, body, conclusions	5			
Content clearly and logically organized, good transitions	5			
<b>Presentation (20%)</b>				
Correct spelling, grammar, and syntax	10			
Clear and easy to read	10			
<b>Quality of Layout and Graphics (10%)</b>	10			
<b>TOTAL SCORE</b>	100			

##### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone	Benchmark	
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### *Oral communication value rubric for evaluating presentation tasks:*

	Capstone	Milestone	Benchmark	
	4	3	2	1

<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Digital Image Processing**

**Course Code: IT130**

### **1. General information**

Course designation	This course provides students fundamental knowledge of digital image processing
Semester(s) in which the course is taught	7
Person responsible for the course	Dr. Ha Viet Uyen Synh
Language	English
Relation to curriculum	Elective (All programs)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours: 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : 4 Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	
Course objectives	This course helps students discuss digital image processing fundamentals; review of Digital Signal Processing algorithms such as Discrete Fourier Transform; intensity transforms, frequency domain filtering; image restoration and reconstruction; color image processing; multiresolution processing; image compression; morphological image processing.
Course learning outcomes	CLO 1. Understand bases of digital image formation. CLO 2. Understand the color image foundations.  CLO 3. Apply special-domain image filtering.

		<b>Competency level</b>	<b>Course learning outcome (CLO)</b>	
Knowledge	1,2			
Skill	3			
Attitude				
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p>			
Topic	Weight	Level		
Chapter 1: Introduction	3	I, T		
Chapter 2: Digital Image Fundamentals	6	I, T		
Chapter 3: Intensity Transformations and Spatial Filtering (part 1)	3	T, U		
Chapter 3: Intensity Transformations and Spatial Filtering (part 2)	6	T, U		
Chapter 4: Filtering in the frequency domain	6	T, U		
Chapter 5: Image restoration and reconstruction	3	T, U		
Chapter 6: Color Image processing	3	T, U		
Chapter 7: Wavelets and multiresolution processing (part 1)	3	T, U		
Chapter 7: Wavelets and multiresolution processing (part 2)	3	T, U		
Chapter 8: Image compression	3	T, U		
Chapter 9: Morphological image processing	3	T, U		
Chapter 10: Image segmentation	3	T, U		
Chapter 11: Representation and description	3	T, U		
Chapter 12: Object recognition	3	T, U		
Revision Application Design and Development	3			
Examination forms	Multiple-choice questions, short-answer questions			
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>			
Reading list	<ol style="list-style-type: none"> <li>1. Rafael C. Gonzalez, Richard E. Woods, Digital Image Processing 3rd, 2008</li> </ol>			

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	x	x				
2	x	x				
3						x

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessment s	Learning activities	Resources
1	Chapter 1: Introduction	1,2	Quiz, Lab, Exam	lecture, exercises	
2	Chapter 2: Digital Image Fundamentals	1,2	Quiz, Lab, Exam	lecture, exercises, lab	
3	Chapter 3: Intensity Transformations and Spatial Filtering (part 1)	1,2,3	Quiz, Lab, Exam	lecture, exercises, lab	
4	Chapter 3: Intensity Transformations and Spatial Filtering (part 2)	1,2,3	Quiz, Lab, Exam	lecture, exercises, lab	
5	Chapter 4: Filtering in the frequency domain	1,2	Quiz, Lab, Exam	lecture, exercises, lab	
6	Chapter 5: Image restoration and reconstruction	1,2	Quiz, Lab, Exam	lecture, exercises, lab	
7	Chapter 6: Color Image processing	1,2	Quiz, Lab, Exam	lecture, exercises, lab	
<b>8</b>	<b>Midterm</b>				
9	Chapter 7: Wavelets and multiresolution processing (part 1)	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
10	Chapter 7: Wavelets and multiresolution processing (part 2)	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
11	Chapter 8: Image compression	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
12	Chapter 9: Morphological image processing	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
13	Chapter 10: Image segmentation	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
14	Chapter 11: Representation and description	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
15	Chapter 12: Object recognition	2,3	Quiz, Lab, Exam	lecture, exercises, lab	
16	Revision Application Design and Development	1,2,3			
17	<b>Final exam</b>				

### 3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Labs (20%)	20%	20%	20%
Midterm examination (30%)	30%	30%	30%
Final examination (40%)	40%	40%	40%
Exercises/ Quiz (10%)	10%	10%	10%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

### Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

#### 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.

	0	No response/task not attempted
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Note: this rubric is also used to evaluate questions in an exam.

### 5.3. Analytic rubric

#### *Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**Department of English**

**COURSE SYLLABUS**

**Course Name: Critical Thinking**

Course Code: **PE008IU**

**1. General information**

Course designation	<p><i>This course provides the nature and techniques of thought as a basis for our claims, beliefs, and attitudes about the world. The course also explores the process in which people develop their claims and support their beliefs.</i></p> <p><i>Specifically, the course includes the theory and practice of presenting arguments in oral and written forms, making deductive and inductive arguments, evaluating the validity or strength of arguments, detecting fallacies in arguments, and refuting fallacious arguments.</i></p> <p><i>Resources for the reasoning process include hypothetical and real-life situations in various fields of natural sciences, social sciences, and humanities.</i></p>
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Trần Thanh Tú (Ph.D) Nguyễn Thị Thủy (Ph.D) Phạm Ngọc (Ph.D) Nguyễn Văn Tiệp (Ph.D) Vũ Tiên Thịnh (MA) Đỗ Thị Diệu Ngọc (MA)
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, discussions, homework assignments, students' presentations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (lecture, exercise): 45 Private study including examination preparation, specified in hours <sup>1</sup> : 90
Credit points	3

<sup>1</sup> When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	None								
Course objectives	<p>This course will enable students to</p> <ul style="list-style-type: none"> <li>● develop the habits of assessing and defending the reasonableness of their beliefs and values as well as those of others</li> <li>● appreciate the importance of looking at an issue from a variety of perspectives</li> <li>● apply critical thinking skills in both public and personal settings</li> </ul>								
Course learning outcomes	<p>Upon the successful completion of this course, students will be able to:</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>           CLO1. Know the general concepts and standards of critical thinking; and comprehend the disadvantages of barriers to critical thinking in various contexts            CLO2. Know the elements of an argument and two patterns of reasoning            CLO3. Know the fallacies of relevance and insufficient evidence in arguments         </td></tr> <tr> <td>Skill</td><td>           CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms            CLO5. Test the validity of deductive arguments using Venn diagram and truth tables            CLO6. Analyze and standardize arguments            CLO7. Evaluate truth claims and refute arguments            CLO8. Analyze weaknesses in inductive arguments to strengthen them         </td></tr> <tr> <td>Attitude</td><td>CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations)</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1. Know the general concepts and standards of critical thinking; and comprehend the disadvantages of barriers to critical thinking in various contexts CLO2. Know the elements of an argument and two patterns of reasoning CLO3. Know the fallacies of relevance and insufficient evidence in arguments	Skill	CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms CLO5. Test the validity of deductive arguments using Venn diagram and truth tables CLO6. Analyze and standardize arguments CLO7. Evaluate truth claims and refute arguments CLO8. Analyze weaknesses in inductive arguments to strengthen them	Attitude	CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations)
Competency level	Course learning outcome (CLO)								
Knowledge	CLO1. Know the general concepts and standards of critical thinking; and comprehend the disadvantages of barriers to critical thinking in various contexts CLO2. Know the elements of an argument and two patterns of reasoning CLO3. Know the fallacies of relevance and insufficient evidence in arguments								
Skill	CLO4. Construct and evaluate deductive and inductive arguments in spoken and written forms CLO5. Test the validity of deductive arguments using Venn diagram and truth tables CLO6. Analyze and standardize arguments CLO7. Evaluate truth claims and refute arguments CLO8. Analyze weaknesses in inductive arguments to strengthen them								
Attitude	CLO9. Defend personal/group beliefs with good arguments and in appropriate manners (project presentations)								

Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (2 hours)</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p>		
	<b>Topic</b>	<b>Weight</b>	<b>Level</b>
	Introduction to Critical thinking	3	I, T, U
	Recognizing arguments	3	T, U
	Basic logical concepts	3	T, U
	A little categorical logic	3	T, U
	A little propositional logic	3	T, U
	Logical fallacies I	3	T, U
	Logical fallacies II	3	T, U
	Review for Midterm test	3	U
	Analyzing arguments	3	T, U
	Evaluating arguments and truth claims	3	T, U
	Inductive reasoning	3	T, U
	Project: Group presentation	9	U
	Review for Final Exam	3	U
Examination forms	40 multiple-choice questions for the midterm and final exams and group presentations for the final project		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation.</p> <p>Questions and comments are strongly encouraged.</p> <p>Overall passing score: 50/100</p>		
Reading list	<p>[1] Bassham, Irwin, Nardone, and Wallace, <i>Critical Thinking: A Student's Introduction</i>, 6<sup>th</sup> edition, McGraw-Hill Education, 2020.</p> <p>[2] Moore, B.N. et al. (2009). <i>Critical Thinking</i>, 9th ed. McGraw-Hill</p> <p>[3] Patrick J. Hurley (2012). <i>A Concise Introduction to Logic</i> (11<sup>th</sup> ed.), Wadsworth, Cengage Learning</p> <p>+ Relevant web resources</p>		

## 2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1						
2						
3						

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Critical thinking	1	HW 1/Quiz 1	Lecture, Discussion, Homework, Quiz	[1] Chapter 1
2	Recognizing arguments	2	HW 2/Quiz 2	Lecture, Discussion, Homework, Quiz	[1] Chapter 2
3	Basic logical concepts	2	HW 3/Quiz 3	Lecture, Discussion, Homework, Quiz	[1] Chapter 3
4	A little categorical logic	3	HW 4/Quiz 4	Lecture, Discussion, Homework, Quiz	[1] Chapter 9
5	A little propositional logic	3	HW 5/Quiz 5	Lecture, Discussion, Homework, Quiz	[1] Chapter 10
6	Logical fallacies I	4	HW 6/Quiz 6	Lecture, Discussion, Homework, Quiz	[1] Chapter 5
7	Logical fallacies II	4	HW 7/Quiz 7	Lecture, Discussion, Homework, Quiz	[1] Chapter 6
8	Review for midterm exam + sample test				
9 + 10	<b>Midterm exam: Chapters 1, 2, 3, 9, 10</b>				
11	Analyzing arguments	5	HW 8/Quiz 8	Lecture, Discussion, Homework	[1] Chapter 7
12	Evaluating arguments and truth claims	5	HW 9/Quiz 9	Lecture, Discussion, Homework	[1] Chapter 8
13	Inductive reasoning	2	HW 10/Quiz 10	Lecture, Discussion, Homework	[1] Chapter 11
14	Project: Group presentation	6	Group work	Presentation, Discussion	
15	Project: Group presentation	6	Group work	Presentation, Discussion	
16	Project: Group presentation	6	Group work	Presentation, Discussion	
17	Review for final exam + sample test				

18	Reserved week						
19+20	<b>Final exam: Chapters 5, 6, 7, 8, 11</b>						

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8	CLO9
Class participation and Assignments (30%)	80% Pass	80% Pass	80% Pass	80% Pass	80% Pass				80% Pass
Midterm exam (30%)						80% Pass	80% Pass	80% Pass	
Final exam (40%)						80% Pass	80% Pass	80% Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

#### 5. Rubrics (optional)

**Date revised: 15 August, 2022**

By coordinator: Đỗ Thị Diệu Ngọc

Contact details:

Email: dtdngoc@hcmiu.edu.vn

Mobile: 0904361717

*Ho Chi Minh City, 15 August 2022*

***Head of Department***

*(Signature)*

*Nguyễn Huy Cường*



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Entrepreneurship**

**Course Code: IT120**

### **1. General information**

Course designation	An introduction to the creative and innovative managerial practices of successful entrepreneurship.
Semester(s) in which the course is taught	7
Person responsible for the course	MSc. Dao Tran Hoang Chau
Language	English
Relation to curriculum	Compulsory (CS, NE, CE) Elective (DS)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) Private study including examination preparation, specified in hours: 90
Credit points	Number of credits : 3 Lecture: 3 Laboratory: 0
Required and recommended prerequisites for joining the course	
Course objectives	This course reviews the significant economic and social contributions entrepreneurs provide to society, the intense lifestyle commitment, and the skills necessary for entrepreneurial success. It explores how to identify and develop solutions to the most common leadership and personal challenges faced by entrepreneurs when starting new ventures or launching new products. It also promotes a deeper understanding of what is required to be

	a successful entrepreneur, highlights the skills and tools necessary to start a new business and explores alternatives to common pitfalls. This course applies entrepreneurial marketing approaches used by successful entrepreneurs. These include utilizing industry sector trends, identifying emerging customer niches, developing new products/services, using guerilla marketing strategies, and Internet and social marketing strategies. It emphasizes importance of managing cash flows, ratio analysis, pro forma development, and the basics of deal structure and harvesting a business venture. Students will identify and interpret sources of information from company financial reports, financial publications, industry benchmarks, the media, and web sites. An introduction to the process of researching, writing, and presenting a business plan. Students identify and screen ideas using a business feasibility study that describes the product features, market opportunity, customer profile, sales forecast, competitive advantage, and profit potential. Following a successful feasibility study, students may use business plan software as each develops their own complete business plan.																		
Course learning outcomes	<p>CLO 1. Understand entrepreneurial processes;  CLO 2. Apply new technology to boost business performance;  CLO 3. Manage marketing strategy and financial statements in a enterprise;</p> <table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>1, 2, 3</td></tr> <tr> <td>Skill</td><td>1, 3</td></tr> <tr> <td>Attitude</td><td>3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	1, 2, 3	Skill	1, 3	Attitude	3										
Competency level	Course learning outcome (CLO)																		
Knowledge	1, 2, 3																		
Skill	1, 3																		
Attitude	3																		
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: lecture session (3 hours)  Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Entrepreneurship, Creativity and Innovation;</td><td>3</td><td>I, T</td></tr> <tr> <td>Creative Problem Solving Model;</td><td>3</td><td>T, U</td></tr> <tr> <td>Develop a Product. Generate Ideas and Protect Inventions;</td><td>2</td><td>T</td></tr> <tr> <td>Marketing Strategies;</td><td>3</td><td>T, U</td></tr> <tr> <td>Finance and Accounting</td><td>4</td><td>T, U</td></tr> </tbody> </table>	Topic	Weight	Level	Entrepreneurship, Creativity and Innovation;	3	I, T	Creative Problem Solving Model;	3	T, U	Develop a Product. Generate Ideas and Protect Inventions;	2	T	Marketing Strategies;	3	T, U	Finance and Accounting	4	T, U
Topic	Weight	Level																	
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Develop a Product. Generate Ideas and Protect Inventions;	2	T																	
Marketing Strategies;	3	T, U																	
Finance and Accounting	4	T, U																	
Examination forms	Multiple-choice questions, short-answer questions																		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																		
Reading list	<ol style="list-style-type: none"> <li>Duening &amp; Hisrich &amp; Lechter, Technology Entrepreneurship 2nd, 2014</li> </ol>																		

## **2. Learning Outcomes Matrix**

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

CLO	SLO					
	1	2	3	4	5	6
1			x			
2		x				
3				x		

## **3. Planned learning activities and teaching methods**

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Entrepreneurship, Creativity and Innovation;	1	Midterm exam	Lecture, In-class activities, Quiz	
2	Creative Problem Solving Model;	1	Midterm exam	Lecture, In-class activities, Quiz	
3	Develop a Product. Generate Ideas and Protect Inventions;	2	Midterm exam, Assignment	Lecture, In-class activities, Project	
4	Midterm				
5	Marketing Strategies;	3	Final exam, Assignment	Lecture, Project	
6	Finance and Accounting	3	Final exam, Assignment	Lecture, Project	
7	<b>Final exam</b>				

## **4. Assessment plan**

*Note: %Pass: Target that % of students having scores greater than 50 out of 100.*

Assessment Type	CLO1	CLO2	CLO3
Midterm examination (25%)	50%	50%	
Projects/Presentations/ Report (25%)			60%
Final examination (40%)			40%
Exercises/ Quiz (10%)	50%	50%	

## **Rubrics (optional)**

## 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
			Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>	10		
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone			Benchmark
		4	3	2	
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.	

<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

#### **Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting,	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and

	and speaker appears polished and confident.	and speaker appears comfortable.	understandable, and speaker appears tentative.	speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

*Source: Association of American Colleges and Universities*

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**



Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Internship**

**Course Code: IT082**

### **1. General information**

Course designation	This course helps students to do an internship in industry and prepare a topic for a pre-thesis and thesis
Semester(s) in which the course is taught	7
Person responsible for the course	Lecturer of School of Computer Science and Engineering; Advisor of the Company/Organization (in Industry)
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 90 hours Private study including examination preparation, specified in hours: 90
Credit points	Number of credits : 3 Lecture: 0 Laboratory: 3
Required and recommended prerequisites for joining the course	Follows requirements of the academic program
Course objectives	This course requires students to work in IT-related organizations or businesses from June to September. Each student has supervised by a faculty member at the School and an instructor at the organization. The student will join/run a technical project, and/or participate in soft skills courses. The internship lasts minimum 8 weeks and 3 sessions per week. Students have to report progress to instructors after 3 weeks of receiving the project. Depending on the project requirements of the organization or business, students may arrange for longer

	<p>time. At the end of the internship, students will submit internship reports and assessment reports from the instructor at the organization or business to the School. Instructors read the reports and confirm the internship marks for the students. Students can also register this course in main semesters or take part in internships abroad for a period of 6 months. The registration and evaluation process are similar.</p>																		
Course learning outcomes	<p>CLO 1. Recognize the roles of an engineer in practical environment.  CLO 2. Develop practical products or run product development projects in industry  CLO 3. Follow requirements/regulations and laws</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1, CLO2</td></tr> <tr> <td>Skill</td><td>CLO1, CLO2</td></tr> <tr> <td>Attitude</td><td>CLO3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1, CLO2	Skill	CLO1, CLO2	Attitude	CLO3										
Competency level	Course learning outcome (CLO)																		
Knowledge	CLO1, CLO2																		
Skill	CLO1, CLO2																		
Attitude	CLO3																		
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: within 3 months  Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Introduction of the internship place</td><td>9</td><td>U</td></tr> <tr> <td>Review the existing issues of an assigned project</td><td>9</td><td>U</td></tr> <tr> <td>Study and solve some issues in product development</td><td>9</td><td>U</td></tr> <tr> <td>Implement some new functions or features for the project product</td><td>9</td><td>U</td></tr> <tr> <td>Presentation</td><td>9</td><td>U</td></tr> </tbody> </table>	Topic	Weight	Level	Introduction of the internship place	9	U	Review the existing issues of an assigned project	9	U	Study and solve some issues in product development	9	U	Implement some new functions or features for the project product	9	U	Presentation	9	U
Topic	Weight	Level																	
Introduction of the internship place	9	U																	
Review the existing issues of an assigned project	9	U																	
Study and solve some issues in product development	9	U																	
Implement some new functions or features for the project product	9	U																	
Presentation	9	U																	
Examination forms	Multiple-choice questions, short-answer questions																		
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																		
Reading list																			

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1		X				X
2		X				X
3				X	X	

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction of the internship place	1,2	Check and Evaluate	Research and working	At company or organization
3	Review the existing issues of an assigned project	1,2	Check and Evaluate	Research and working	At company or organization
4	Study and solve some issues in product development	1,2	Check and Evaluate	Research and working	At company or organization
5	Implement some new functions or features for the project product	1,2	Check and Evaluate	Research and working	At company or organization
6	Presentation	1,2,3	Check and Evaluate	Research and working	At company or organization
7	<b>Final grade</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Final grade (100%)	30%	40%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

### 5. Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports				
Student: .....	HW/Assignment: .....	Date: .....	Evaluator: .....	
		Max.	Score	Comments
<b>Technical content (60%)</b>				
Abstract clearly identifies purpose and summarizes principal content		10		
Introduction demonstrates thorough knowledge of relevant background and prior work		15		
Analysis and discussion demonstrate good subject mastery		30		
Summary and conclusions appropriate and complete		5		
<b>Organization (10%)</b>				
Distinct introduction, body, conclusions		5		
Content clearly and logically organized, good transitions		5		
<b>Presentation (20%)</b>				
Correct spelling, grammar, and syntax		10		
Clear and easy to read		10		
<b>Quality of Layout and Graphics (10%)</b>		10		
<b>TOTAL SCORE</b>		100		

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**

Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Special Study of the Field**

**Course Code: IT083**

### **1. General information**

Course designation	This course helps students to do a research topic and prepare for a thesis
Semester(s) in which the course is taught	7
Person responsible for the course	Lecturers (thesis advisor)
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Total workload: 90 hours Contact hours (please specify whether lecture, exercise, laboratory session, etc.): Private study including examination preparation, specified in hours: 90
Credit points	Number of credits : 3 Lecture: 0 Laboratory: 3
Required and recommended prerequisites for joining the course	Required number of credits, Internship
Course objectives	Students are advised to select a subject under the guidance of a faculty member. Project content might be a research topic or building a new application that underlies the graduation thesis. Research topics include fields of academic program that are academic or practical.
Course learning outcomes	CLO 1. Research a specific topic in the field. CLO 2. Design the model or system architecture of the application product

	CLO 3. Have a good preparation to develop and improve the product in the thesis.																					
	<table border="1"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO1, CLO2</td></tr> <tr> <td>Attitude</td><td>CLO3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO1, CLO2	Attitude	CLO3													
Competency level	Course learning outcome (CLO)																					
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Skill	CLO1, CLO2																					
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Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: in the whole semester.</p> <p>Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Find out/define a topic of the subject</td><td>3</td><td>U</td></tr> <tr> <td>Review and evaluate existing issues/problems</td><td>8</td><td>U</td></tr> <tr> <td>Research and propose some solutions</td><td>8</td><td>U</td></tr> <tr> <td>Deploy some main functions or new features for the product project</td><td>8</td><td>U</td></tr> <tr> <td>Testing and evaluating solutions or products</td><td>8</td><td>U</td></tr> <tr> <td>Write a report</td><td>10</td><td>U</td></tr> </tbody> </table>	Topic	Weight	Level	Find out/define a topic of the subject	3	U	Review and evaluate existing issues/problems	8	U	Research and propose some solutions	8	U	Deploy some main functions or new features for the product project	8	U	Testing and evaluating solutions or products	8	U	Write a report	10	U
Topic	Weight	Level																				
Find out/define a topic of the subject	3	U																				
Review and evaluate existing issues/problems	8	U																				
Research and propose some solutions	8	U																				
Deploy some main functions or new features for the product project	8	U																				
Testing and evaluating solutions or products	8	U																				
Write a report	10	U																				
Examination forms	Multiple-choice questions, short-answer questions																					
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the appointments with lecturer. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Tasks: Students must have more than 50/100 points overall to pass this course.</p>																					
Reading list	Related works and books																					

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1		X				
2		X				X
3			X			

## 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Find out the topic of the subject	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers

2	Review and evaluate existing issues	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
4	Research and propose some solutions	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
5	Deploy some main functions or new features for the product project	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
6	Testing and evaluating solutions or products	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
7	Write a report	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
8	<b>Final grade</b>				

#### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Final grade (100%)	30%	40%	30%

Note: %Pass: Target that % of students having scores greater than 60 out of 100.

#### 5. Rubrics (optional)

##### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
	Max.	Score	Comments
<b>Technical content (60%)</b>			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
<b>Quality of Layout and Graphics (10%)</b>			
<b>TOTAL SCORE</b>	100		

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
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<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022  
**Dean of School of Computer Science and Engineering**

Assoc. Prof. Nguyen Van Sinh



**VIETNAM NATIONAL UNIVERSITY HCMC  
INTERNATIONAL UNIVERSITY**  
**School of Computer Science and Engineering**

## COURSE SYLLABUS

**Course Name: Thesis**

**Course Code: IT058**

### **1. General information**

Course designation	This course evaluates students obtained knowledges to complete the academic program.
Semester(s) in which the course is taught	8
Person responsible for the course	Lecturers (thesis advisor)
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Contact hours: 300 hours Private study including examination preparation, specified in hours: 300
Credit points	Number of credits : 10 Lecture: 0 Laboratory: 10
Required and recommended prerequisites for joining the course	Required number of credits Special Study of the Field
Course objectives	Dissertations are industrial projects designed to ensure that students have mastered their subjects in the program. All projects are based on "real projects" provided by the industry to students to develop skills and apply knowledge gained from all courses throughout the program. Students will work independently to develop requirements, design, implement and provide solutions to business problems. Students can follow any appropriate process model, must self-manage the project, follow all appropriate project management techniques. The success of the project is largely determined by whether the student adequately solves the client's problem. Students will provide the final product with all artifacts that match the process model

	being used (e.g. project plan, technical requirements, system architecture, design documentation, test plan, source code and installed software products).																					
Course learning outcomes	<p>CLO 1. Research a specific topic in the field.  CLO 2. Design the model or system architecture of the application product  CLO 3. Hard work to develop and finish the product of the thesis.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Competency level</th><th>Course learning outcome (CLO)</th></tr> </thead> <tbody> <tr> <td>Knowledge</td><td>CLO1</td></tr> <tr> <td>Skill</td><td>CLO1, CLO2</td></tr> <tr> <td>Attitude</td><td>CLO3</td></tr> </tbody> </table>	Competency level	Course learning outcome (CLO)	Knowledge	CLO1	Skill	CLO1, CLO2	Attitude	CLO3													
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Attitude	CLO3																					
Content	<p><i>The description of the contents should clearly indicate the weighting of the content and the level.</i></p> <p>Weight: in the whole last semester  Teaching levels: I (Introduce); T (Teach); U (Utilize)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Topic</th><th>Weight</th><th>Level</th></tr> </thead> <tbody> <tr> <td>Find out the thesis topic</td><td>4</td><td>U</td></tr> <tr> <td>Review and evaluate existing issues</td><td>20</td><td>U</td></tr> <tr> <td>Research and propose some solutions</td><td>30</td><td>U</td></tr> <tr> <td>Deploy the thesis product</td><td>40</td><td>U</td></tr> <tr> <td>Testing and evaluating solutions or products</td><td>40</td><td>U</td></tr> <tr> <td>Thesis defense</td><td>1</td><td>U</td></tr> </tbody> </table>	Topic	Weight	Level	Find out the thesis topic	4	U	Review and evaluate existing issues	20	U	Research and propose some solutions	30	U	Deploy the thesis product	40	U	Testing and evaluating solutions or products	40	U	Thesis defense	1	U
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Find out the thesis topic	4	U																				
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Research and propose some solutions	30	U																				
Deploy the thesis product	40	U																				
Testing and evaluating solutions or products	40	U																				
Thesis defense	1	U																				
Examination forms	Multiple-choice questions, short-answer questions																					
Study and examination requirements	<p>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.</p> <p>Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</p>																					
Reading list																						

## 2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	X	X				
2	X	X				X
3			X			

### 3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Find out the thesis topic	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
2	Review and evaluate existing issues	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
4	Research and propose some solutions	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
5	Deploy the thesis product	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
6	Testing and evaluating solutions or products	1,2	Check and Evaluate	Discuss and Research	Related work, books and research papers
7	Thesis defense	1,2,3	By committee	presentation	
8	<b>Final grade</b>				

### 4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Final grade (100%)	30%	40%	30%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

### 5. Rubrics (optional)

#### 5.1. Grading checklist

Grading checklist for Written Reports			
Student: .....	HW/Assignment: .....		
Date: .....	Evaluator: .....		
		Max.	Score
<b>Technical content (60%)</b>			Comments
Abstract clearly identifies purpose and summarizes principal content		10	
Introduction demonstrates thorough knowledge of relevant background and prior work		15	
Analysis and discussion demonstrate good subject mastery		30	
Summary and conclusions appropriate and complete		5	
<b>Organization (10%)</b>			
Distinct introduction, body, conclusions		5	
Content clearly and logically organized, good transitions		5	
<b>Presentation (20%)</b>			
Correct spelling, grammar, and syntax		10	
Clear and easy to read		10	
<b>Quality of Layout and Graphics (10%)</b>		10	
<b>TOTAL SCORE</b>		100	

## 5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	Description
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

## 5.3. Analytic rubric

*Critical thinking value rubric for evaluating questions in exams:*

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Explanation of issues</b>	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
<b>Influence of context and assumptions</b>	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
<b>Student's position (perspective, thesis/hypothesis)</b>	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
<b>Conclusions and related outcomes (implications and consequences)</b>	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

**Oral communication value rubric for evaluating presentation tasks:**

	Capstone	Milestone		Benchmark
	4	3	2	1
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
<b>Supporting Material</b>	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

**Date revised: February 15, 2022**

Ho Chi Minh City, 15/02/2022

**Dean of School of Computer Science and Engineering**

Assoc. Prof. Nguyen Van Sinh

## 9. CURRICULUM

- a) Bachelor of Engineering in Information Technology – Network Engineering Major. English level (AE1): IELTS >=5.5

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
EN007IU	Writing AE1	2	IT116IU	C/C++ Programming	4
EN008IU	Listening AE1	2	MA003IU	Calculus 2	4
IT064IU	Introduction to Computing	3	PE008IU	Critical Thinking	3
MA001IU	Calculus 1	4	PH015IU	Physics 3	3
PH013IU	Physics 1	2	PH016IU	Physics 3 Laboratory	1
PH014IU	Physics 2	2	PT002IU	Physical Training 2	3
PT001IU	Physical Training 1	3			
Total		22			22

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
IT153IU	Discrete Mathematics	3	IT013IU	Algorithms and Data Structures	4
IT067IU/ EE053IU	Digital Logic Design	3	IT079IU	Principles of Database Management	4
IT069IU	Object-Oriented Programming	4	IT089IU	Computer Architecture	4
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT125IU	System and Networks Administration	4
IT091IU	Computer Networks	4	PE016IU	Marxist – Leninist Political Economy	2
MA023IU or MA024IU	Calculus 3 or Differential Equations	4			
PH012IU	Physics 4	2			
PE015IU	Philosophy Marx - Lenin	3			

Total		24			18
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Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT139IU	Scalable and Distributed Computing	4	IT096IU	Net-Centric Programming	4
IT017IU	Operating Systems	4	IT093IU	Web Application Development	4
IT131IU	Theoretical Models in Computing	4	IT094IU	Information System Management	4
MA026IU	Probability, Statistic & Random Process	3		Elective	4
PE020IU	Engineering Ethics and Professional Skills	3	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2			
Total		20			18

Subject ID	Year 3. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
	Elective	4			
	Elective	4			
IT117IU	System and Network Security	4			
PE019IU	Ho Chi Minh's Thoughts	2			
Total		20			10

- b) Bachelor of Engineering in Information Technology – Network Engineering Major. English level (IE0): IELTS <=4.0

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 1	Credits
ENTP00	Intensive English 0	17	ENTP01	Intensive English 1	17
Total		17			17

Subject ID	Year 1. Semester 2	Credits
ENTP02	Intensive English 2	13

Subject ID	Year 1. Semester 3	Credits
EN007IU& EN008IU	Academic English 1	4
PE015IU	Philosophy Marx - Lenin	3
Total		7

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
IT064IU	Introduction to Computing	3	IT116IU	C/C++ Programming	4
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PH013IU	Physics 1	2	PE008IU	Critical Thinking	3
PH014IU	Physics 2	2	PH015IU	Physics 3	3
PT001IU	Physical Training 1	3	PH016IU	Physics 3 Laboratory	1
			PT002IU	Physical Training 2	3
Total		18			22

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT153IU	Discrete Mathematics	3	IT013IU	Algorithms and Data Structures	4
IT067IU/ EE053IU	Digital Logic Design	3	IT079IU	Principles of Database Management	4
IT069IU	Object-Oriented Programming	4	IT089IU	Computer Architecture	4
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT125IU	System and Networks Administration	4

IT091IU	Computer Networks	4	PE016IU	Marxist – Leninist Political Economy	2
MA023IU or MA024IU	Calculus 3 or Differential Equations	4			
PH012IU	Physics 4	2			
Total		21			18

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT139IU	Scalable and Distributed Computing	4	IT096IU	Net-Centric Programming	4
IT017IU	Operating Systems	4	IT093IU	Web Application Development	4
IT131IU	Theoretical Models in Computing	4	IT094IU	Information System Management	4
MA026IU	Probability, Statistic & Random Process	3		Elective	4
PE020IU	Engineering Ethics and Professional Skills	3	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2			
Total		20			18

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
	Elective	4			
	Elective	4			
IT117IU	System and Network Security	4			
PE019IU	Ho Chi Minh's Thoughts	2			

Total		20			10
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c) Bachelor of Engineering in Information Technology – Network Engineering Major. English level (IE1): IELTS <=4.5

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 1	Credits
ENTP01	Intensive English 1	17	ENTP02	Intensive English 2	13
Total		17			13

Subject ID	Year 1. Semester 2	Credits
EN007IU	Writing AE1	2
EN008IU	Listening AE1	2
PT001IU	Physical Training 1	3
PE015IU	Philosophy Marx - Lenin	3
PE016IU	Marxist – Leninist Political Economy	2
PH013IU	Physics 1	2
PH014IU	Physics 2	2
Total		16

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	IT116IU	C/C++ Programming	4
CH012IU	Chemistry Laboratory	1	MA003IU	Calculus 2	4
IT064IU	Introduction to Computing	3	PE008IU	Critical Thinking	3
MA001IU	Calculus 1	4	PH015IU	Physics 3	3
EN011IU	Writing AE2	2	PH016IU	Physics 3 Laboratory	1
EN012IU	Speaking AE2	2	PT002IU	Physical Training 2	3
Total		15			18

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT153IU	Discrete Mathematics	3	IT013IU	Algorithms and Data Structures	4
IT067IU/ EE053IU	Digital Logic Design	3	IT079IU	Principles of Database Management	4
IT069IU	Object-Oriented Programming	4	IT089IU	Computer Architecture	4

IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT125IU	System and Networks Administration	4
IT091IU	Computer Networks	4			
MA023IU or MA024IU	Calculus 3 or Differential Equations	4			
PH012IU	Physics 4	2			
Total		21			16

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT139IU	Scalable and Distributed Computing	4	IT096IU	Net-Centric Programming	4
IT017IU	Operating Systems	4	IT093IU	Web Application Development	4
IT131IU	Theoretical Models in Computing	4	IT094IU	Information System Management	4
MA026IU	Probability, Statistic & Random Process	3		Elective	4
PE020IU	Engineering Ethics and Professional Skills	3	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2			
Total		20			18

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
	Elective	4			
	Elective	4			
IT117IU	System and Network Security	4			

PE019IU	Ho Chi Minh's Thoughts	2			
Total		20			10

d) Bachelor of Engineering in Information Technology – Network Engineering Major. English level (IE2): IELTS <=5.0

Subject ID	Year 1. Semester 1	Credits
ENTP02	Intensive English 2	13
Total		13

Subject ID	Year 1. Semester 2	Credits
EN008IU & EN007IU	Academic English 1	4
PT001IU	Physical Training 1	3
PE016IU	Marxist – Leninist Political Economy	2
PE015IU	Philosophy Marx - Lenin	3
PH013IU	Physics 1	2
PH014IU	Physics 2	2
Total		16

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
IT064IU	Introduction to Computing	3	IT116IU	C/C++ Programming	4
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PT002IU	Physical Training 2	3	PH015IU	Physics 3	3
PE008IU	Critical Thinking	3	PH016IU	Physics 3 Laboratory	1
Total		17			16

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT153IU	Discrete Mathematics	3	IT013IU	Algorithms and Data Structures	4

IT067IU/ EE053IU	Digital Logic Design	3	IT079IU	Principles of Database Management	4
IT069IU	Object-Oriented Programming	4	IT089IU	Computer Architecture	4
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT125IU	System and Networks Administration	4
IT091IU	Computer Networks	4			
MA023IU or MA024IU	Calculus 3 or Differential Equations	4			
PH012IU	Physics 4	2			
Total		21			16

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT139IU	Scalable and Distributed Computing	4	IT096IU	Net-Centric Programming	4
IT017IU	Operating Systems	4	IT093IU	Web Application Development	4
IT131IU	Theoretical Models in Computing	4	IT094IU	Information System Management	4
MA026IU	Probability, Statistic & Random Process	3		Elective	4
PE020IU	Engineering Ethics and Professional Skills	3	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2			
Total		20			18

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
	Elective	4			

	Elective	4			
IT117IU	System and Network Security	4			
PE019IU	Ho Chi Minh's Thoughts	2			
Total		20			10

Elective Course:

Subject ID	Elective	Credits
IT140IU	Fundamental Concepts of Data Security	4
IT076IU	Software Engineering	4
IT056IU	IT Project Management	4
IT156IU	Development and Operations	4
IT133IU	Mobile Application Development	4
IT160IU	Data Mining	4
IT134IU	Internet of Things	4
IT130IU	Digital Image Processing	4

e) Bachelor of Engineering in Information Technology – Computer Engineering Major (AE1): IELTS >=5.5

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
EN007IU	Writing AE1	2	IT116IU	C/C++ Programming	4
EN008IU	Listening AE1	2	MA003IU	Calculus 2	4
IT064IU	Introduction to Computing	3	PH015IU	Physics 3	3
MA001IU	Calculus 1	4	PH016IU	Physics 3 Laboratory	1
PH013IU	Physics 1	2	PT002IU	Physical Training 2	3
PH014IU	Physics 2	2	PE008IU	Critical Thinking	3
PT001IU	Physical Training 1	3			
Total		22			22

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
IT131IU	Theoretical Models in Computing	4	IT013IU	Algorithms and Data Structures	4
IT154IU	Linear Algebra	3	IT089IU	Computer Architecture	4
IT067IU/ EE053IU/	Digital Logic Design	3	PE016IU	Marxist-Leninist Political Economy	2

IT069IU	Object-Oriented Programming	4	IT103IU	Digital Signal Processing Or EE092IU (3 Credit / EE093IU (1 Credit) Digital Signal Processing & Laboratory	4
IT099IU/EE054 IU	Digital Logic Design Laboratory	1	IT128IU/EE083IU	Micro-processing Systems	3
IT153IU	Discrete Mathematics	3	IT129IU/EE084IU	Micro-processing Systems Laboratory	1
IT068IU/EE051IU	Principles of EE1	3	PE015IU	Philosophy Marx-Lenin	3
IT098IU/EE052IU	Principles of EE1 Laboratory	1			
Total		22			21

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT076IU	Software Engineering	4	IT105IU/EE063IU	Digital System Design	3
IT017IU	Operating Systems	4	IT106IU/EE117IU	Digital System Design Laboratory	1
MA026IU	Probability, Statistic & Random Process	3	IT115IU/EE104IU	Embedded Systems	3
IT074IU/EE090IU	Electronics Devices	3	IT127IU/EE118IU	Embedded Systems Laboratory	1
IT101IU/EE091IU	Electronics Devices Laboratory	1	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2	PH012IU	Physics 4	2
PE020IU	Engineering Ethics and Professional Skills	3		Elective	4
IT091IU	Computer Networks	4			
Total		24			16

Subject ID	Year 3. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
PE019IU	Ho Chi Minh's Thoughts	2			
IT110IU/EE066IU	Concepts in VLSI Design	3			

IT126IU/ EE121IU	Concepts in VLSI Design Laboratory	1			
	Elective	4			
Total		16			10

f) Bachelor of Engineering in Information Technology – Computer Engineering Major (IE0): IELTS <=4.0

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 1	Credits
ENTP00	Intensive English 0	17	ENTP01	Intensive English 1	17
Total		17			17

Subject ID	Year 1. Semester 2	Credits
ENTP02	Intensive English 2	13

Subject ID	Year 1. Semester 3	Credits
EN007IU&EN008 IU	Academic English 1	4
PE015IU	Philosophy Marx - Lenin	3
Total		7

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
IT064IU	Introduction to Computing	3	IT116IU	C/C++ Programming	4
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PH013IU	Physics 1	2	PH015IU	Physics 3	3
PH014IU	Physics 2	2	PH016IU	Physics 3 Laboratory	1
PT001IU	Physical Training 1	3	PT002IU	Physical Training 2	3
			IT068IU/ EE051IU	Principles of EE1	3
			IT098IU/ EE052IU	Principles of EE1 Laboratory	1
Total		18			23

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT131IU	Theoretical Models in Computing	4	IT013IU	Algorithms and Data Structures	4
IT154IU	Linear Algebra	3	IT089IU	Computer Architecture	4
IT067IU/ EE053IU/	Digital Logic Design	3	PE016IU	Marxist-Leninist Political Economy	2
IT069IU	Object-Oriented Programming	4	IT103IU	Digital Signal Processing Or EE092IU (3 Credit / EE093IU (1 Credit) Digital Signal Processing & Laboratory	4
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT128IU/ EE083IU	Micro-processing Systems	3
IT153IU	Discrete Mathematics	3	IT129IU/ EE084IU	Micro-processing Systems Laboratory	1
Total		18			18

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT076IU	Software Engineering	4	IT105IU/ EE063IU	Digital System Design	3
IT017IU	Operating Systems	4	IT106IU/ EE117IU	Digital System Design Laboratory	1
MA026IU	Probability, Statistic & Random Process	3	IT115IU/ EE104IU	Embedded Systems	3
IT074IU/ EE090IU	Electronics Devices	3	IT127IU/ EE118IU	Embedded Systems Laboratory	1
IT101IU/ EE091IU	Electronics Devices Laboratory	1	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2	PE008IU	Critical Thinking	3
PE020IU	Engineering Ethics and Professional Skills	3	PH012IU	Physics 4	2
IT091IU	Computer Networks	4		Elective	4
Total		24			19

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
PE019IU	Ho Chi Minh's Thoughts	2			
IT110IU/ EE066IU	Concepts in VLSI Design	3			
IT126IU/ EE121IU	Concepts in VLSI Design Laboratory	1			
	Elective	4			
Total		16			10

g) Bachelor of Engineering in Information Technology – Computer Engineering Major (IE1): IELTS <=4.5

Subject ID	Year 1. Semester 1	Credits	Subject ID	Year 1. Semester 1	Credits
ENTP01	Intensive English 1	17	ENTP02	Intensive English 2	13
Total		17			13

Subject ID	Year 1. Semester 2	Credits
EN007IU	Writing AE1	2
EN008IU	Listening AE1	2
PT001IU	Physical Training 1	3
PE015IU	Philosophy Marx - Lenin	3
PE016IU	Marxist – Leninist Political Economy	2
PH013IU	Physics 1	2
PH014IU	Physics 2	2
Total		16

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
IT064IU	Introduction to Computing	3	IT116IU	C/C++ Programming	4
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PH015IU	Physics 3	3	IT068IU/ EE051IU	Principles of EE1	3
PH016IU	Physics 3 Laboratory	1	IT098IU/ EE052IU	Principles of EE1 Laboratory	1
PT002IU	Physical Training 2	3			
Total		18			16

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT131IU	Theoretical Models in Computing	4	IT013IU	Algorithms and Data Structures	4
IT154IU	Linear Algebra	3	IT089IU	Computer Architecture	4
IT067IU/ EE053IU/	Digital Logic Design	3	IT103IU	Digital Signal Processing Or EE092IU (3 Credit / EE093IU (1 Credit) Digital Signal Processing & Laboratory	4
IT069IU	Object-Oriented Programming	4	IT128IU/ EE083IU	Micro-processing Systems	3
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT129IU/ EE084IU	Micro-processing Systems Laboratory	1
IT153IU	Discrete Mathematics	3			
Total		18			16

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT076IU	Software Engineering	4	IT105IU/ EE063IU	Digital System Design	3
IT017IU	Operating Systems	4	IT106IU/ EE117IU	Digital System Design Laboratory	1
MA026IU	Probability, Statistic & Random Process	3	IT115IU/ EE104IU	Embedded Systems	3

IT074IU/ EE090IU	Electronics Devices	3	IT127IU/ EE118IU	Embedded Systems Laboratory	1
IT101IU/ EE091IU	Electronics Devices Laboratory	1	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2	PE008IU	Critical Thinking	3
PE020IU	Engineering Ethics and Professional Skills	3	PH012IU	Physics 4	2
IT091IU	Computer Networks	4		Elective	4
Total		24			19

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
PE019IU	Ho Chi Minh's Thoughts	2			
IT110IU/ EE066IU	Concepts in VLSI Design	3			
IT126IU/ EE121IU	Concepts in VLSI Design Laboratory	1			
	Elective	4			
Total		16			10

h) Bachelor of Engineering in Information Technology – Computer Engineering Major (IE2): IELTS <=5.0

Subject ID	Year 1. Semester 1	Credits
ENTP02	Intensive English 2	13
Total		13

Subject ID	Year 1. Semester 2	Credits
EN008IU & EN007IU	Academic English 1	4
PT001IU	Physical Training 1	3
PE016IU	Marxist – Leninist Political Economy	2
PE015IU	Philosophy Marx - Lenin	3
PH013IU	Physics 1	2
PH014IU	Physics 2	2
Total		16

Subject ID	Year 2. Semester 1	Credits	Subject ID	Year 2. Semester 2	Credits
CH011IU	Chemistry for Engineers	3	EN011IU	Writing AE2	2
CH012IU	Chemistry Laboratory	1	EN012IU	Speaking AE2	2
IT064IU	Introduction to Computing	3	IT116IU	C/C++ Programming	4
MA001IU	Calculus 1	4	MA003IU	Calculus 2	4
PH015IU	Physics 3	3	IT068IU/ EE051IU	Principles of EE1	3
PH016IU	Physics 3 Laboratory	1	IT098IU/ EE052IU	Principles of EE1 Laboratory	1
PT002IU	Physical Training 2	3			
Total		18			16

Subject ID	Year 3. Semester 1	Credits	Subject ID	Year 3. Semester 2	Credits
IT131IU	Theoretical Models in Computing	4	IT013IU	Algorithms and Data Structures	4
IT154IU	Linear Algebra	3	IT089IU	Computer Architecture	4
IT067IU/ EE053IU/	Digital Logic Design	3	IT103IU	Digital Signal Processing Or EE092IU (3 Credit / EE093IU (1 Credit) Digital Signal Processing & Laboratory	4

IT069IU	Object-Oriented Programming	4	IT128IU/ EE083IU	Micro-processing Systems	3
IT099IU/EE054IU	Digital Logic Design Laboratory	1	IT129IU/ EE084IU	Micro-processing Systems Laboratory	1
IT153IU	Discrete Mathematics	3			
Total		18			16

Subject ID	Year 4. Semester 1	Credits	Subject ID	Year 4. Semester 2	Credits
IT076IU	Software Engineering	4	IT105IU/ EE063IU	Digital System Design	3
IT017IU	Operating Systems	4	IT106IU/ EE117IU	Digital System Design Laboratory	1
MA026IU	Probability, Statistic & Random Process	3	IT115IU/ EE104IU	Embedded Systems	3
IT074IU/ EE090IU	Electronics Devices	3	IT127IU/ EE118IU	Embedded Systems Laboratory	1
IT101IU/ EE091IU	Electronics Devices Laboratory	1	PE018IU	History of Vietnamese Communist Party	2
PE017IU	Scientific Socialism	2	PE008IU	Critical Thinking	3
PE020IU	Engineering Ethics and Professional Skills	3	PH012IU	Physics 4	2
IT091IU	Computer Networks	4		Elective	4
Total		24			19

Subject ID	Year 4. Semester 3	Credits
IT082IU	Internship	3
Total		3

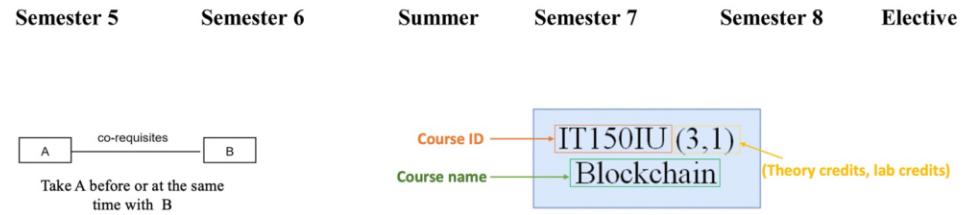
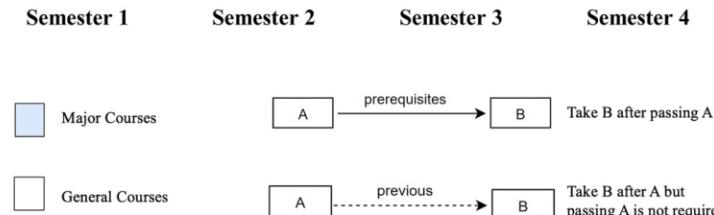
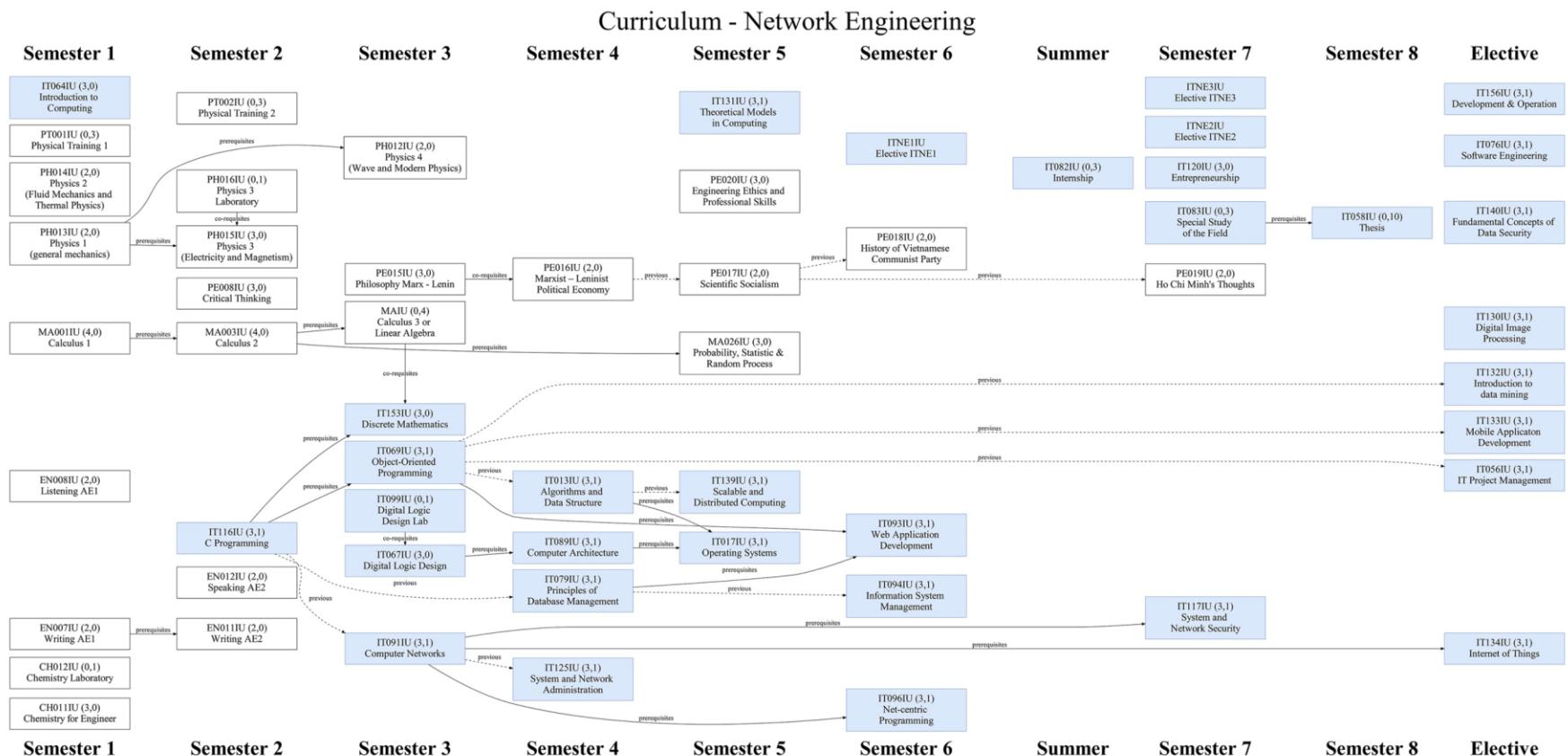
Subject ID	Year 5. Semester 1	Credits	Subject ID	Year 5. Semester 2	Credits
IT083IU	Special Study of the Field	3	IT058IU	Thesis	10
IT120IU	Entrepreneurship	3			
PE019IU	Ho Chi Minh's Thoughts	2			

IT110IU/ EE066IU	Concepts in VLSI Design	3			
IT126IU/ EE121IU	Concepts in VLSI Design Laboratory	1			
	Elective	4			
Total		16			10

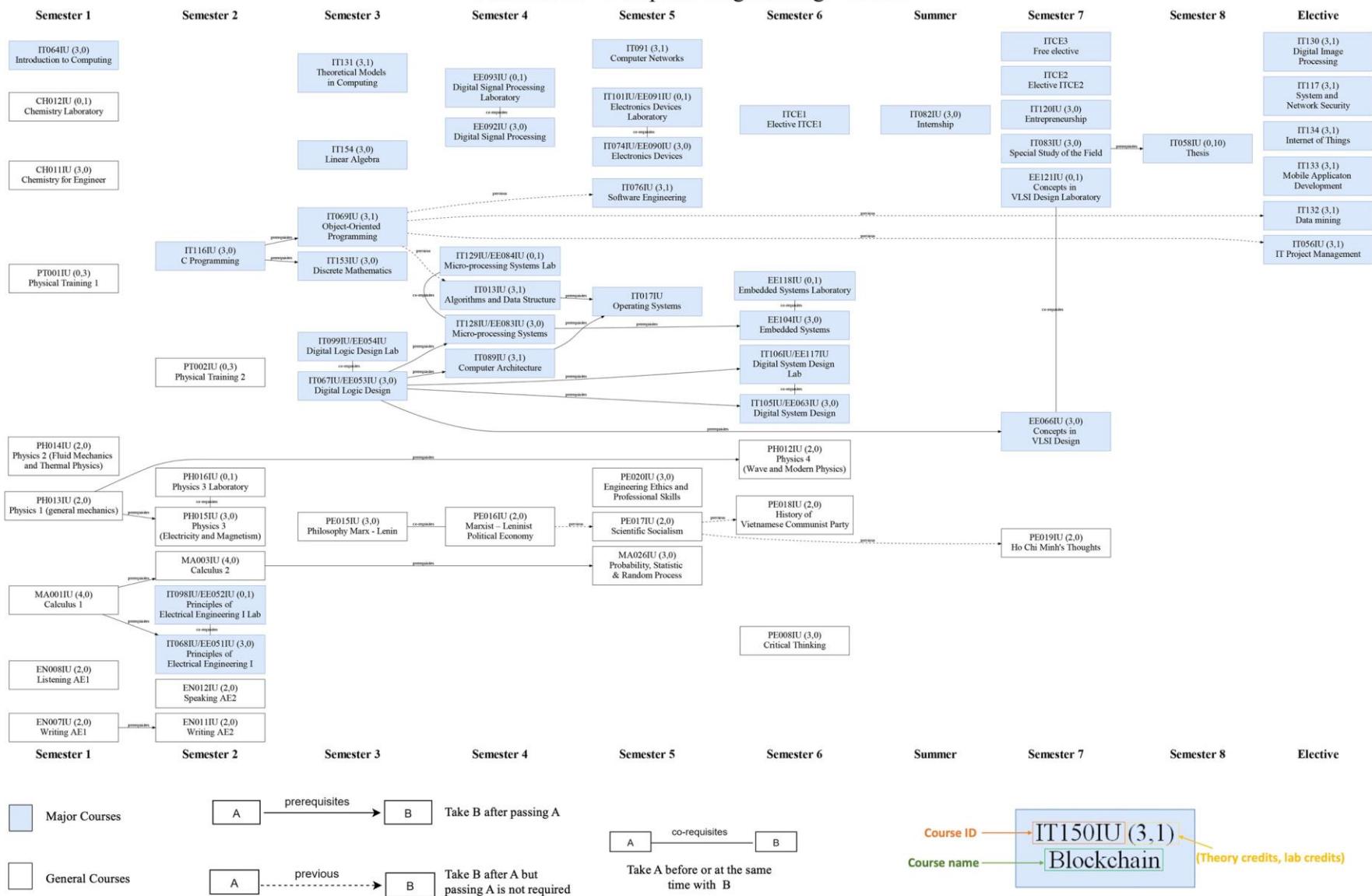
Elective Course:

Subject ID	Elective	Credits
	Free elective	4
IT056IU	IT Project Management	4
IT133IU	Mobile Application Development	4
IT160IU	Data Mining	4
IT134IU	Internet of Things	4
IT130IU	Digital Image Processing	4
IT117IU	System and Network Security	4

## 10. CURRICULUM MAPPING



## Curriculum - Computer Engineering - v2021



## 11. RELATION OF PROGRAM ELOS AND COURSES

Table 11.1 - Learning Outcome vs. Course Matrix for NE Program with Low Contribution (✓), Medium Contribution (✓✓), and High Contribution (✓✓✓)

No	Course ID	Subject	Term	1	2	3	4	5	6
1	CH011IU	Chemistry for Engineers	1	✓					
2	CH012IU	Chemistry Laboratory	1	✓					
3	EN007IU	Writing AE1	1			✓✓✓			
4	EN008IU	Listening AE1	1			✓✓✓			
5	IT064IU	Introduction to Computing	1	✓			✓	✓	
6	MA001IU	Calculus 1	1	✓✓					
7	PH013IU	Physics 1	1	✓					
8	PH014IU	Physics 2	1	✓					
9	PT001IU	Physical Training 1	1						
10	EN011IU	Writing AE2	2			✓✓✓			
11	EN012IU	Speaking AE2	2			✓✓✓			
12	IT116IU	C/C++ Programming	2	✓	✓✓✓			✓	
13	MA003IU	Calculus 2	2	✓✓					
14	PE008IU	Critical Thinking	2			✓✓	✓		
15	PH015IU	Physics 3	2	✓					
16	PH016IU	Physics 3 Laboratory	2	✓					
17	PT002IU	Physical Training 2	2						
18	IT067IU/ EE053IU	Digital Logic Design	3	✓	✓				
19	IT069IU	Object-Oriented Programming	3	✓✓	✓✓✓				✓
20	IT091IU	Computer Networks	3	✓✓	✓✓✓			✓	
21	IT099IU/ EE054IU	Digital Logic Design Laboratory	3	✓	✓				✓
22	IT153IU	Discrete Mathematics	3	✓	✓				✓
23	MA023IU or MA024IU	Calculus 3 or Differential Equations	3	✓	✓		✓		
24	PE015IU	Philosophy Marx - Lenin	3				✓✓		
25	PH012IU	Physics 4	3	✓					
26	IT013IU	Algorithms and Data Structures	4	✓✓	✓✓✓				✓
27	IT079IU	Principles of Database Management	4	✓✓✓	✓✓✓			✓✓	
28	IT089IU	Computer Architecture	4	✓	✓				✓
29	IT125IU	System and Networks Administration	4	✓✓✓		✓	✓✓✓		
30	PE016IU	Marxist – Leninist Political Economy	4				✓✓		
31	IT017IU	Operating Systems	5	✓	✓				
32	IT131IU	Theoretical Models in Computing	5	✓	✓				

33	IT139IU	Scalable and Distributed Computing	5	✓	✓				✓
34	MA026IU	Probability, Statistic & Random Process	5	✓✓					
35	PE017IU	Scientific Socialism	5			✓✓			
36	PE020IU	Engineering Ethics and Professional Skills	5				✓✓		
37	IT093IU	Web Application Development	6	✓	✓			✓	✓
38	IT094IU	Information System Management	6		✓		✓		
39	IT096IU	Net-Centric Programming	6	✓	✓✓✓				✓
40	PE018IU	History of Vietnamese Communist Party	6				✓✓		
41		Elective	6						
42	IT082IU	Internship	After Term 6		✓		✓	✓	✓
43	IT083IU	Special Study of the Field	7		✓	✓			✓
44	IT117IU	System and Network Security	7	✓	✓	✓	✓		
45	IT120IU	Entrepreneurship	7			✓	✓	✓	
46	PE019IU	Ho Chi Minh's Thoughts	7				✓✓		
47		Elective	7						
48		Elective	7						
49	IT058IU	Thesis	8	✓	✓	✓			✓

#### Elective course

1	IT056IU	IT Project Management	6 or 7		✓	✓		✓	✓
2	IT076IU	Software Engineering	6 or 7			✓✓		✓✓✓	✓✓✓
3	IT130IU	Digital Image Processing	6 or 7	✓	✓				✓
4	IT160IU	Data Mining	6 or 7	✓				✓	✓
5	IT133IU	Mobile Application Development	6 or 7	✓✓	✓✓✓				✓
6	IT134IU	Internet of Things	6 or 7		✓✓✓			✓✓	✓
7	IT140IU	Fundamental Concepts of Data Security	6 or 7	✓	✓	✓	✓		
8	IT156IU	Development and Operations	6 or 7	✓	✓				✓

Table 11.2 - Learning Outcome vs. Course Matrix for CE Program with Low Contribution (✓), Medium Contribution (✓✓), and High Contribution (✓✓✓)

No	Course ID	Subject	Term	1	2	3	4	5	6
1	CH011IU	Chemistry for Engineers	1	✓					
2	CH012IU	Chemistry Laboratory	1	✓					
4	EN007IU	Writing AE1	1			✓✓✓			
5	EN008IU	Listening AE1	1			✓✓✓			
6	IT064IU	Introduction to Computing	1	✓			✓	✓	
7	MA001IU	Calculus 1	1	✓✓					
8	PH013IU	Physics 1	1	✓					
9	PH014IU	Physics 2	1	✓					
10	PT001IU	Physical Training 1	1						
11	EN011IU	Writing AE2	2			✓✓✓			
12	EN012IU	Speaking AE2	2			✓✓✓			
13	IT068IU/EE051IU	Principles of EE1	2	✓	✓	✓			✓
14	IT098IU/EE052IU	Principles of EE1 Laboratory	2	✓	✓	✓			✓
15	IT116IU	C/C++ Programming	2	✓	✓✓✓				
16	MA003IU	Calculus 2	2	✓✓					
17	PH015IU	Physics 3	2	✓					
18	PH016IU	Physics 3 Laboratory	2	✓					
19	PT002IU	Physical Training 2	2						
20	IT067IU/EE053IU	Digital Logic Design	3	✓	✓				
21	IT069IU	Object-Oriented Programming	3	✓✓	✓✓✓				✓
22	IT099IU/EE054IU	Digital Logic Design Laboratory	3	✓	✓				✓
23	IT131IU	Theoretical Models in Computing	3	✓	✓				
24	IT153IU	Discrete Mathematics	3	✓	✓				✓
25	IT154IU	Linear Algebra	3	✓	✓		✓		
26	PE015IU	Philosophy Marx-Lenin	3				✓✓		
27	IT013IU	Algorithms and Data Structures	4	✓✓	✓✓✓				✓
28	IT089IU	Computer Architecture	4	✓	✓				✓
29	IT103IU/EE092IU	Digital Signal Processing	4	✓	✓	✓			✓
30	IT128IU/EE083IU	Micro-processing Systems	4	✓	✓	✓			✓
31	IT129IU/EE084IU	Micro-processing Systems Laboratory	4	✓	✓	✓			✓
32	PE016IU	Marxist-Leninist Political Economy	4				✓✓		
33	IT017IU	Operating Systems	5	✓	✓				
34	IT074IU/EE090IU	Electronics Devices	5	✓	✓	✓			✓
35	IT076IU	Software Engineering	5			✓✓		✓✓✓	✓✓✓
36	IT091IU	Computer Networks	5	✓✓	✓✓✓			✓	
37	IT101IU/EE091IU	Electronics Devices Laboratory	5	✓	✓	✓			✓

38	MA026IU	Probability, Statistic & Random Process	5	✓✓						
39	PE017IU	Scientific Socialism	5				✓✓			
40	PE020IU	Engineering Ethics and Professional Skills	5					✓✓		
41	IT105IU/EE063IU	Digital System Design	6		✓					✓
42	IT106IU/EE117IU	Digital System Design Laboratory	6		✓					✓
43	IT115IU/EE104IU	Embedded Systems	6		✓					✓
44	IT127IU/EE118IU	Embedded Systems Laboratory	6		✓					✓
45	PE008IU	Critical Thinking	6			✓✓	✓			
46	PE018IU	History of Vietnamese Communist Party	6				✓✓			
47	PH012IU	Physics 4	6	✓						
48		Elective	After Term 6							
49	IT082IU	Internship	6		✓		✓	✓	✓	✓
50	IT083IU	Special Study of the Field	7		✓	✓				✓
51	IT110IU/EE066IU	Concepts in VLSI Design	7	✓	✓	✓				✓
52	IT120IU	Entrepreneurship	7			✓	✓	✓		
53	IT126IU/EE121IU	Concepts in VLSI Design Laboratory	7	✓	✓	✓				✓
54	PE019IU	Ho Chi Minh's Thoughts	7				✓✓			
55		Elective	7							
56	IT058IU	Thesis	8	✓	✓	✓				✓

#### Elective course

1	IT133IU	Mobile Application Development	6 or 7	✓✓	✓✓✓					✓
2	IT134IU	Internet of Things	6 or 7		✓✓✓			✓✓		✓
3	IT056IU	IT Project Management	6 or 7		✓	✓		✓		✓
4	IT117IU	System and Network Security	6 or 7	✓	✓	✓	✓			
5	IT160IU	Data Mining	6 or 7	✓				✓		✓
6	IT130IU	Digital Image Processing	6 or 7	✓	✓					✓

## 12. ACADEMIC REGULATION

The total workload per semester is about 18 credits on average. The maximum number of credits a student can take a semester is 24 credits, and the minimum credit is 12. According to IU's academic regulation, each credit is equivalent to 15 hours in-class study and 30 hours of self-study.

## **University's policy on fraud, plagiarism, and academic integrity**

According to IU Policy, a fraud policy includes these key elements:

- An explicit definition of actions that are deemed to be fraudulent
- Allocation of responsibilities for the overall management of fraud
- A statement that all appropriate measures to deter fraud will be taken
- The formal procedures that employees should follow if a fraud is suspected
- Notification that all instances of suspected fraud will be investigated and reported to the appropriate authorities
- An unequivocal statement that all fraud offenders will be prosecuted and that the police will be assisted in any investigation that is required
- A statement that all efforts will be made to recover wrongfully obtained assets from fraudsters
- Encouragement to employees to report any suspicion of fraud

At IU, plagiarism is the representation of others' ideas as one's own without giving proper attribution to the original author or authors. Plagiarism occurs when a student copies direct phrases from a text (e.g., books, journals, and internet) and does not provide quotation marks, paraphrases or summarizes those ideas without giving credit to the author or authors. In all cases, if such information is not properly and accurately documented with appropriate credits given, then the student has committed plagiarism. Sometimes the act of plagiarizing can be purely unintentional.

The University has also established a system for managing intellectual property (IP). The system includes:

- Promulgating regulations on managing intellectual assets, including intellectual property in 2012.
- Establishing a Unit of Intellectual Asset Management.
- Having relevant staff officially trained
- Setting up a Turnitin system.

IU has issued a regulation on managing intellectual assets that are designed in compliance with the regulations promulgated by VNUHCM. In addition, other regulations and documents that also take IP into account include the regulation of professional ethics in teaching and research, R&D contracts, and forms (e.g., requests for human blood plasma, acknowledgment of a publication).

IU has invested in setting up the Turnitin system to check plagiarism for research articles and theses. A student's thesis, prior to being submitted to schools and departments, must be submitted to Turnitin. If the percentage of similarity between the work and other works is less than 20%, that thesis is accepted to be submitted to the schools and departments for defense. The Turnitin report is required to be affixed to the final version of the thesis. This procedure ensures the students and staff respect the copyright of others' works.

Academic Integrity is an important basic responsibility that is taken by all students in higher education. Members of the University Community are obliged to report all cases to the appropriate faculty, including the Dean or Department Chair.

A copy of this policy is available to all students and faculty by looking at the University website. A reference to this policy is provided on every course syllabus within the School/Department.

All faculty members are aware of and have provided input to the Academic Integrity Policy. As mentioned above, information pertaining to academic integrity is provided on all course syllabus for both online and on-campus courses. Faculty are encouraged to express both orally and in written form the importance of academic integrity and to give the students clear guidelines and expectations of what is acceptable behavior regarding the use of someone else's work.

Students must also take on the responsibility of academic integrity by promoting work that is original in content and properly referenced. Violations of academic integrity include, but are not limited to, cheating and plagiarism of academic assignments (i.e., research papers, critiques, presentations, and book/journal reviews). Cheating on exams is also a serious violation and is in violation of this policy. Faculty members that suspect academic dishonesty are expected to report violations to the department chair within 5 calendar days of the occurrence.

This policy in hand provides the student with a fair procedure for due process if a charge is brought to a student's attention from a faculty member.

## **COURSE SPECIFICATION**