I. DESCRIPTION OF TEACHING PROGRAMME

Pursuant to the Decision No. 2166a/QD-DHYD dated August 26, 2020 of the Rector of the University of Medicine and Pharmacy, Hue University, the training programme in Medical Laboratory according to the credit system is described as follows:

Major name : Medical Laboratory
Training Degree : Bachelor
Type of Education : Full-time
Code : 7720601

1. TRAINING OBJECTIVES

1.1. General objective

Training Bachelor of Medical Laboratory with medical ethics, basic scientific knowledge, basic medicine, professional knowledge and skills at university level; Capacity of independent work, creativity, self-study and scientific research to meet the needs of protecting, caring for and improving people's health.

1.2. Specific objectives

1.2.1. Attitude

- Devote to the care, protection and improvement of people's health, wholeheartedly serving the patients;
- Respect and sincerely cooperate with colleagues;
- Be honest, objective, serious in professional work, have the spirit of scientific research and rise in learning.

1.2.2. Knowledge

- Have basic scientific knowledge, basic medicine, engineering-technology principles and specialized knowledge to independently and creatively solve problems in the field of Medical Laboratory;
- Understand the principles, rules, operating procedures, preservation and maintenance of some types of equipment in the field of Medical Laboratory
- Have knowledge of scientific methodology in engineering practice, study and scientific research;
- Understand of laws and policies on the protection, care and improvement of people's health.

1.2.3. Skill

- Implement proficiently common clinical testing techniques and apply new techniques in specialized activities.
- Perform mass testing in the community independently or in collaboration with colleagues.
- Implement, check and supervise aseptic regulations, regulations on the use of chemicals, specialized biological products and biosafety in the laboratory.
- Participate in the organization and management of a biomedical laboratory.
- Participate in directing the line and preventing epidemics.
- Implement quality assurance measures and test quality control.
- Participate in scientific research and access information from many different sources and forms.

1.2.4. Working position after graduation

Medical facilities, hospitals and some departments have a need to use Bachelors of Medical Laboratory

1.2.5. Language and computer skills

Use at least one foreign language and computer to study and improve professional qualifications.

2. TRAINING TIME : 4 years

No	Learning volume	Credit units
1	**General Education Knowledge** (including Basic foreign language courses, Physical Education, Defense and Security Education)	30
2	**Professional education knowledge,** including:	
	- Basic major knowledge	21
	- Major knowledge (including specialized knowledge)	51
	- Additional knowledge (Elective)	24
	- Graduation Examination	7
Total		**133**

3. VOLUME OF COMPLETE KNOWLEDGE : 133 Credit Units

(109 compulsory Credit Units và 24 Elective Credits Units. Unincluding basic foreign language courses, physical education, defense and security education)

4. ENROLLMENT OBJECT:

According to the Regulation on enrollment of regular universities and colleges of the Ministry of Education and Training.

5. TRAINING PROGRESSION AND GRADUATION REQUIREMENTS

Consolidated document No. 17/VBHN-BGDĐT dated May 15, 2014 of the Minister of Education and Training approved of the Regulation on University and College training according to the credit system.

6. PROGRAMME CONTENT

List	Courses codes	Programme content	Number of credits	Credit distribution	
				Theory	Practice
I		**7.1. General knowledge**	**30**	**27**	**3**
		7.1.1. General courses:	**20**	**20**	**0**
1	Y.LLCT.1.01.3	Marxist-Leninist Philosophy	3	3	0
2	Y.LLCT.1.02.2	Marxist- Leninist Political Economy	2	2	0
3	Y.LLCT.1.03.2	Scientific Socialism	2	2	0
4	Y.LLCT.1.04.2	History of the Communist Party of Vietnam	2	2	0
5	Y.LLCT.1.05.2	Ho Chi Minh's Ideology	2	2	0
6	Y.NNKC.1.01.7	Non-specialized foreign language	7	7	0
7	X.NNG.1.01.2	Specialized foreign language	2	2	0
		7.1.2. Support specialist courses	**10**	**7**	**3**
8	N.KCB.2.01.3	Informatics and Medical Statistics	3	2	1
9	N.KCB.2.02.3	Chemistry and Biophysics	3	2	1
10	N.KCB.2.04.2	Biology and Genetics	2	1	1
11	Y.YCC.2.01.2	Health Psychology and Medical Ethics	2	2	0
II		**7.2. Specialized knowledge**	**103**	**45**	**58**

List	Courses codes	Programme content	Number of credits	Credit distribution	
				Theory	Practice
		7.2.1. Basic specialized knowledge	**21**	**15**	**6**
12	N.GPH.3.01.3	Anatomy	3	2	1
13	N.MPH.3.01.2	Histology	2	1	1
14	N.SLY.3.01.2	Physiology	2	1	1
15	N.SLB.3.01.2	Pathophysiology- Immunology	3	2	1
16	X.DLY.3.01.2	Pharmacology - Clinical Toxicology	2	1	1
17	Y.KDD.3.01.2	Basic Nursing	2	1	1
18	X.PDT.3.01.2	Internal Pathology and Surgical Pathology	2	2	0
19	N.YCC.3.01.3	Nutrition, Environmental Health, Epidemiology	3	3	0
20	Y.YCC.5.08.2	Scientific Research	2	2	0
		7.2.2. Specialist knowledge	**51**	**22**	**29**
21	X.PDT.4.02.2	Fundamental Laboratory	2	1	1
22	X.HHY.4.01.3	Hematologic Cytology	3	2	1
23	X.HHY.4.03.2	Hemostasis - Coagulation	2	1	1
24	X.HHY.4.04.2	Hematology and Blood Transfusion	2	1	1
25	X.HHY.4.05.2	Advance Hematology	2	1	1
26	X.SHY.4.01.2	Biochemistry 1	2	1	1
27	X.SHY.4.02.2	Biochemistry 2	2	1	1
28	X.SHY.4.03.3	Biochemistry 3	3	2	1
29	X.VSY.4.01.2	Microbiology 1	2	1	1
30	X.VSY.4.02.2	Microbiology 2	2	1	1
31	X.VSY.4.03.3	Microbiology 3	3	2	1
32	X.KST.4.01.2	Parasitology 1	2	1	1
33	X.KST.4.02.2	Parasitology 2	2	1	1
34	X.KST.4.03.2	Parasitology 3	2	1	1
35	X.GPB.4.01.3	Cytopathology 1	3	2	1
36	X.DTR.4.01.3	Molecular Biomedicine	3	1	2
37	X.SHY.4.05.2	Laboratory Quality Control Assessment	2	1	1
38	X.VSY.4.05.2	Nosocomial Infections Control	2	1	1
39	X.VSY.4.06.2	Practical Medical Laboratory 1 : Microbiology 1	2	0	2
40	X.SHY.4.06.2	Practical Medical Laboratory 2: Biochemistry 1	2	0	2
41	X.HHY.4.06.2	Practical Medical Laboratory 3: Hematology 1	2	0	2
42	X.GPB.4.03.2	Practical Medical Laboratory 4: Pathology 1	2	0	2

List	Courses codes	Programme content	Number of credits	Credit distribution	
				Theory	Practice
43	X.KST.4.04.2	Practical Medical Laboratory 5: Parasitology 1	2	0	2
		7.2.3. Additional knowledge (optinal)	**24**	**5**	**19**
44	X.PDT.5.03.2	Techniques of Microbiology and Parasitology in Hygiene and Food safety	2	1	1
45	X.PDT.5.04.2	Laboratory Management and Quality Assurance	2	1	1
46	X.GPB.4.02.2	Cytopathology 2	2	1	1
47	X.KST.5.05.2	Advanced Parasitology testing	2	1	1
48	X.HHY.5.07.2	Practical Medical Laboratory 6: Hematology 2	2	0	2
49	X.GPB.5.05.2	Practical Medical Laboratory 7: Pathology 2	2	0	2
50	X.VSY.5.07.2	Practical Medical Laboratory 8: Microbiology 2	2	0	2
51	X.KST.5.06.2	Practical Medical Laboratory 9: Parasitology 2	2	0	2
52	X.SHY.5.07.2	Practical Medical Laboratory 10: Biochemistry 2	2	0	2
53	X.NOI.5.01.2	Basic Endoscopy	2	1	1
54	X.PDT.5.05.2	Professional Practice 1	2	0	2
55	X.PDT.5.06.2	Professional Practice 2	2	0	2
		7.4. Graduation course	**7**	**3**	**4**
56	X.PDT.4.07.3	Theory	3	3	0
57	X.PDT.4.08.4	Practice	4	0	4
TOTAL			**133**	**72**	**61**
III		**7.5. Alternative courses**			
1	X.PDT.5.09.2	Laboratory Management and Quality Assurance 2	2	1	1
2	X.KST.5.07.2	Parasitology 4	2	1	1
3	X.GPB.5.04.2	Cytopathology 2	2	1	1
4	X.VSY.5.08.2	Microbiology 4	2	1	1
5	X.HHY.5.08.2	Advanced Hematology 2	2	1	1
6	X.PDT.5.10.2	Fundamental Laboratory 2	2	1	1
7	X.HHY.5.09.2	Advanced techniques in Hematology and Blood transfusion	2	1	1
8	X.YCC.3.04.2	National Health Organization-National Health Programme – Health Education	2	2	0

II. SUMMARY DESCRIPTION OF THE COURSE

No	Course code	Course name	Credit unit	Summary of the course content	Department
1	Y.LLCT.1.01.3	Marxist-Leninist philosophy	3	Contents promulgated together with Decision No. 4890/QD-BGDĐT, dated December 23, 2019 of the Minister of Education and Training. Approving programmes and textbooks for general use of political theory subjects for training University degree in non-political theory majors.	Faculty of Political Theory
2	Y.LLCT.1.02.2	Marxist-Leninist political economy	2	Contents promulgated together with Decision No. 4890/QD-BGDĐT, dated December 23, 2019 of the Minister of Education and Training. Approving programmes and textbooks for general use of political theory subjects for training University degree in non-political theory majors.	Faculty of Political Theory
3	Y.LLCT.1.03.2	Scientific socialism	2	Contents promulgated together with Decision No. 4890/QD-BGDĐT, dated December 23, 2019 of the Minister of Education and Training. Approving programmes and textbooks for general use of political theory subjects for training University degree in non-political theory majors.	Faculty of Political Theory
4	Y.LLCT.1.04.2	History of the Communist Party of Vietnam	2	Contents promulgated together with Decision No. 4890/QD-BGDĐT, dated December 23, 2019 of the Minister of Education and Training. Approving programmes and textbooks for general use of political theory subjects for training University degree in non-political theory majors.	Faculty of Political Theory
5	Y.LLCT.1.05.2	Ho Chi Minh Ideology	2	Contents promulgated together with Decision No. 4890/QD-BGDĐT, dated December 23, 2019 of the Minister of Education and Training. Approving programmes and textbooks for general use of political theory subjects for	Faculty of Political Theory

No	Course code	Course name	Credit unit	Summary of the course content	Department
				training University degree in non-political theory majors.	
6	Y.NNKC.1.01.7	Non-specialized foreign language	7	Using Hue University's general programme	Foreign Language Department
7	X.NNG.1.01.2	Specialized foreign language	2	This is specialized foreign language content that provides students with specialized words about the general anatomy of body systems and basic words about pathology so that students can read and understand medical texts in English at basic level, and have communication skills in the specialized field with simple situations	Foreign Language Department
8	N.KCB.2.01.3	Informatics and Medical Statistics	3	-The module equips students with skills to compose complete documents by using MS Word; using MS Excel to enter, process, and statistical data. In addition, providing students with basic knowledge about computer networks, the Internet and computer viruses. - Basic knowledge about probability theory in medicine: some applications of Probability in screening diagnostic tests; some distribution rules, and characteristics of random variables in biomedicine. - Basic knowledge of medical statistics: Basic concepts of sampling theory, sampling method and sample distribution; the concepts of variables and how to define variables needed in health researches; parameter estimation and statistical hypothesis testing problems applied in medicine; regression and correlation analysis; how to calculate sample size? - Practice using computers with statistical software to help design tools for data collection, data presentation and analysis.	Faculty Of Basic Sciences

No	Course code	Course name	Credit unit	Summary of the course content	Department
9	N.KCB.2.02.3	Chemistry and Physics - Biophysics	3	- Provide students with basic knowledge about the structure of substances, about the laws of movement and change of substances. Predict the likelihood and direction of chemical processes. Their application in the specialty of Medicine-Pharmacy. - Guide students to perform some experiments to illustrate the theoretical knowledge they have learned. Get acquainted with some basic operations in the laboratory. - Content includes basic knowledge and skills of bioelectrical phenomena; bio optics; sound and ultrasound; biological radioactivity. The main applications of physical factors to living organisms serve the purposes of protecting the environment and the body, diagnosing and treating diseases. Some physical techniques in medical devices…	Faculty of Basics
10	N.KCB.2.04.2	Biology and genetics	2	- Describe the microscopic and viral structures of Prokaryotic and Eukaryotic cells - Describe the relationship between organelle structures and their functions. - Describe basic typical characteristics of life at cell level such as cell division, transport of matter across cell membranes, and cell movement. -Describe the main reproductive methods of organisms and the basic characteristics of the development process and development control mechanisms. - Describe the relationship between humans and the environment	- Faculty Of Basic Sciences - Department of Medical Genetics

No	Course code	Course name	Credit unit	Summary of the course content	Department
				The course focuses on providing theories and concepts about the laws, nature, and basic characteristic processes of life. Genetic diseases now account for a large proportion of diseases in children and adults This proportion will increase with an increasing understanding of the genetic basis of the disease. Medical Genetics is a discipline that aims to apply genetics to medicine. The Medical Genetics module will equip students with basic knowledge of the following contents: (1) genetic and chromosomal mutations; (2) characteristics of genetic diseases; (2) analysis of the pathogenesis of mutant genes; (3) the role of population genetics; (4) screening, diagnosis, and treatment of genetic diseases and (5) genetic counseling This knowledge helps us to better and more deeply understand the pathogenesis of genetic diseases and in many cases, these insights can help prevent disease or make treatment more effective	
11	Y.YCC.2.01.2	Health Psychology and Medical Ethics	2	- The Psychology section includes the basic concepts of general psychology (concepts, research objects, cognitive process psychology, psychology of consciousness, personality psychology) and medical psychology (concepts, stress and issues of psychological hygiene, communication issues in psychology, psychology and pathology, patient psychology) - "Medical Ethics" section includes an introduction to	Faculty of Public Health

No	Course code	Course name	Credit unit	Summary of the course content	Department
				medical ethics and medical ethics ideals, basic principles of medical ethics, and principles applied in the relationship between physician and patient, colleagues, and community.	
12	N.GPH.3.01.3	Anatomy	3	- Anatomy course consists of 3 credits (2 theory and 1 practice) - Describe the anatomy of the human body - Present the application of anatomy in clinical	Department of Anatomy
13	N.MPH.3.01.2	Histology	2	Describe the microscopic and chemical structures of tissues and major parts of organs in the normal human body; relationship between structure and function of tissues and organs	Department of Embryology, Pathology and Forensis Medicine
14	N.SLY.3.01.2	Physiology	2	The course consists of 2 parts: -Theory: + Studying the physiology of red blood cells, thermoregulatory physiology as well as the physiology of some organs in the body: heart, arteries, stomach, glomeruli, thyroid and neurons Teaching methods: give a lecture + Students listen to lectures at the lecture hall and improve their knowledge by reading some specialized reference books - Practice: + Includes practical exercises on some common blood tests, experiments on animals and the use of some simple functional equipments. Teaching in the practice room of the Department + Students can listen to practical theory, watch technicians model and perform techniques themselves under the guidance of technicians. Then evaluate the results obtained and relate the theory.	Department of Physiology

No	Course code	Course name	Credit unit	Summary of the course content	Department
15	N.SLB.3.01.2	Pathophysiology-Immunology	3	- Introduction the basic medical concepts such as disease, etiology-pathogenesis, aging, and mortality. - Analysis of mechanisms and consequences of common pathological processes (inflammation, fever), common disorders of substance metabolism, endocrine system, blood, and organs.	Department of Immunology and Pathophysiology
16	X.DLY.3.01.2	Pharmacology - Clinical Toxicology	2	- The Clinical Toxicology module has 2 credit units (1 Theory and 1 Practical) consisting of 15 theoretical periods and 30 practical laboratory periods. - The main content of the module is to equip students with basic knowledge of Pharmacology, General Pharmacology, and clinical toxicology pharmacology. - The practical part aims to equip students with practical skills in experimental pharmacology and provide clinical evidence on pharmacokinetics and pharmacodynamics of drugs for practical application.	Department of Pharmacology
17	Y.KDD.3.01.2	Basic Nursing	2	Includes essential knowledge on first aid for victims of electric shock, drowning, sunstroke, heatstroke; aseptic, sterilization; ... and basic nursing technical procedures on measuring vital signs, giving first aid to patients with circulatory respiratory arrest, placing urinary catheters, gastric tubes, infusion, puncture of the peritoneal, pleural, pericardium fluids.	Faculty of Nursing
18	X.PDT.3.01.2	Internal Medicine and Surgery	2	**Internal Medicine Section** Causes and pathogenesis, clinical and subclinical symptoms, treatment and prevention of basic diseases	Department of Internal Medicine Department of Surgery

No	Course code	Course name	Credit unit	Summary of the course content	Department
				Surgery Section The module describes how to examine the organs in some common surgical diseases, how to prepare for the clinic, equipment, and the patient as well as the doctor before examining the patient. Thereby, the common surgical diseases in clinical practice, possible causes, and symptoms are typical for common diseases. The module describes the pathology of some surgical diseases including frequency, pathophysiology, symptoms, diagnosis, management attitude, etc. of some common surgical diseases. The content of the module also states the definite diagnosis and differentiation of the above diseases as well as outlines an overview of the management attitude.	
19	N.YCC.3.01.3	Nutrition, Environmental Health, Epidemiology	3	Content includes knowledge of nutrition science and food science, basic knowledge of food safety, environmental health science and occupational health; Abstinence nutrition; Applying knowledge of nutrition - food safety, environmental health - occupation into practice to take care of people's health. Moreover, this module also provides basic knowledge about Epidemiology, helping students to acquire and apply it in health care and scientific research.	Faculty of Public Health
20	Y.YCC.5.08.2	Scientific Research	2	The course on scientific research methods aims to help students acquire basic knowledge and apply it in scientific work and research.	Faculty of Public Health
21	X.PDT.4.02.2	Fundamental Laboratory	2	**Biochemistry section**	Department of Biochemistry

No	Course code	Course name	Credit unit	Summary of the course content	Department
				- Biochemistry, a basic medical subject, provides knowledge and practice of basic biochemistry to serve the diagnosis, monitoring, and treatment of diseases through the implementation of biochemical testing techniques. -The objectives of the Department of Biochemistry are to train medical technicians to use and maintain well-specialized equipment, chemicals, and biological products in the laboratory, accurately use biochemistry units and conversion of biochemical units in clinical practice, help clinicians use biochemistry test results accurately, bring high efficiency to treatment. **Parasitology section** The course content aims to provide students with the knowledge and application of biosafety in the laboratory, proficient use of machines and tools, and performing basic operations in medical laboratories. **Microbiology section** The content of the course is Laboratory disinfection techniques, Direct identification methods by bacteriological stains, including single stain, Gram stain, Ziehl-Neelsen stain, silver impregnating stain; and bacterial culture media and techniques **Hematology section** The course introduces the basic techniques of Hematology	Department of Parasitology Department of Microbiology Department of Hematology
22	X.HHY.4.01.3	Hematologic Cytology	3	Introduce knowledge of hematopoiesis, blood cell types, basic cytological techniques and evaluation of results	Department of Hematology

No	Course code	Course name	Credit unit	Summary of the course content	Department
23	X.HHY.4.03.2	Hemostasis - Coagulation	2	Introduce processes of hemostasis, coagulation, fibrinolysis and some hemostasis tests	Department of Hematology
24	X.HHY.4.04.2	Blood Transfusion	2	Introduce knowledge of hematologic immunology, blood group system, blood product production, blood transfusion process	Department of Hematology
25	X.HHY.4.05.2	Advanced hematology testing	2	The course introduces basic knowledge about blood cell lines, hemostasis, blood grouping systems, blood transfusion indication and monitoring.	Department of Hematology
26	X.SHY.4.01.2	Biochemistry 1	2	Biochemistry is a basic medical subject, which has the role of providing knowledge and practice of basic biochemistry and clinical biochemistry to serve the diagnosis, monitoring and treatment of diseases by carefully biochemistry test - The goal of the Department of Biochemistry is to train physicians and technicians capable of self-study and scientific research, updating with the development of science and technology, bringing usefulness to life, in line with the practice and development trends of countries in the region and the world, meeting the people's health care and protection needs. - Biochemical advances are more and more widely applied, not only to medicine but also to other disciplines such as biology, agro-forestry...	Department of Biochemistry
27	X.SHY.4.02.2	Biochemistry 2	2	Biochemistry is a basic medical subject, which has the role of providing knowledge and practice of basic biochemistry and clinical biochemistry to serve the diagnosis, monitoring and treatment of diseases by carefully biochemistry test	Department of Biochemistry

No	Course code	Course name	Credit unit	Summary of the course content	Department
				Biochemistry is an intersection of many other sciences such as biology, chemistry, physiology, pathophysiology, immunology, pharmacology, hematology, microbiology, parasitology, medical genetics. Some of key sciences of this 21st century such as molecular biology and biotechnology all apply basic biochemistry techniques such as chromatography, electrophoresis, spectroscopy… At the same time, good management and laboratory safety to improve the quality of clinical biochemistry tests The goal of the Department of Biochemistry is to train physicians and technicians capable of self-study and scientific research, updating with the development of science and technology, bringing usefulness to life, in line with the practice and development trends of countries in the region and the world, meeting the people's health care and protection needs.	
28	X.SHY.4.03.3	Biochemmistry 3	3	Biochemistry is a basic medical subject, which has the role of providing knowledge and practice of basic biochemistry and clinical biochemistry to serve the diagnosis, monitoring and treatment of diseases by carefully biochemistry test. Biochemical techniques will be performed through many different machines, chemicals, and techniques. Clinical biochemistry tests will help clinicians to diagnose, monitor and treat patients accurately and effectively, reduce mortality, improve quality of	Department of Biochemmistry

No	Course code	Course name	Credit unit	Summary of the course content	Department
				life as well as life expectancy for patients.	
29	X.VSY.4.01.2	Microbiology 1	2	Content includes knowledge of the cell structure and physiology of bacteria, the interaction of the human body and microorganisms, basic principles of infection, methods of microbiological diagnosis, and methods of prevention and treatment of infections caused by microorganisms. Basic techniques used in microbiological tests such as preparing some culture media, dyes used in the bacteriological diagnosis and implementing several methods of staining, culturing to determine biochemical characteristics, and antibiogram tests.	Department of Microbiology
30	X.VSY.4.02.2	Microbiology 2	2	Content includes knowledge of the biological characteristics, pathogenicity and bacterial diagnostic methods for each pathogenic bacteria. Performing culture methods to isolate and identify common pathogenic bacteria.	Department of Microbiology
31	X.VSY.4.03.3	Microbiology 3	3	Content includes knowledge of the biological characteristics, pathogenicity, and microorganism diagnostic methods for some groups of pathogenic bacteria and viruses. Performing culture methods to isolate and identify common pathogenic bacteria from various specimens.	Department of Microbiology
32	X.KST.4.01.2	Parasitology 1	2	The course introduces the basic knowledge about parasitic helminths that cause human diseases. The learning contents include general characteristics, biological characteristics, shape, structure, physiological characteristics, ecology, development cycle, epidemiological characteristics	Department of Parasitology

No	Course code	Course name	Credit unit	Summary of the course content	Department
				of helminth diseases, and the pathology of helminthiasis, implements diagnostic techniques for helminthiasis.	
33	X.KST.4.02.2	Parasitology 2	2	The course introduces the basic knowledge about some types of parasitic protozoa that cause human diseases. The learning contents include general characteristics, biological characteristics, shape, structure, physiological characteristics, ecology, epidemiological characteristics, pathology of protozoan diseases, implementing diagnostic techniques for protozoan diseases.	Department of Parasitology
34	X.KST.4.03.2	Parasitology 3	2	The course introduces the knowledge about medical microfungi and medical arthropods. The learning contents include general characteristics, biological characteristics, shape, structure, physiological characteristics, ecology, life cycle, epidemiological characteristics, pathology of fungal diseases, and the medical role of arthropods. Implement techniques to diagnose fungal diseases, and to identify medical arthropods.	Department of Parasitology
35	X.GPB.4.01.3	Cytopathology 1	3	The content includes basic knowledge about the work and role of Pathology in diagnosis, contributing to the treatment and prognosis of diseases; basic knowledge of pathology of disease through understanding the morphological changes of cells and tissues; methods and techniques for taking cytological specimens; routine cytological staining techniques in pathology laboratory.	Department of Histology – Embryology, Pathology and Forensic Medicine

No	Course code	Course name	Credit unit	Summary of the course content	Department
36	X.DTR.4.01.3	Molecular Biomedicine	3	This module provides students with knowledge of nucleic acid extraction methods, nucleic acid electrophoresis, PCR techniques and PCR-based techniques, sequencing techniques, and hybridization techniques as well as some enzymes commonly used in molecular biology techniques. In addition, students can perform several techniques used in molecular biomedicine	Department of Medical Genetics
37	X.SHY.4.05.2	Testing quality control	2	- Quality assurance of testing is a subject that covers all policies, regulations, plans on training people, equipping machines, selecting technical methods and reagents to make the reliality of test that clinicians can rely on in the diagnosis and treatment of disease. - Quality Assurance of testing creates optimal conditions, minimizes errors that can occur in 3 stages of the testing process: before, during and after testing. -The goal of the Department of Biochemistry is to train highly skilled technicians with precise technical manipulation for clinical and scientific research. This is in line with the practice and development trends of countries in the region and the world, meeting the people's health care and protection needs.	Department of Biochemistry
38	X.VSY.4.05.2	Nosocomial Infections Control	2	Several groups of emerging viruses: microbiological characteristics, pathogenicity, laboratory diagnosis, prevention methods, and the advanced techniques in diagnostic microbiology	Department of Microbiology
39	X.VSY.4.06.2	Pratical Medical laboratory : Microbiology 1	2	The content of the module is performing culture methods to isolate, identify and do	Department of Microbiology

No	Course code	Course name	Credit unit	Summary of the course content	Department
				antibiogram tests for common pathogenic bacteria from various specimens.	
40	X.SHY.4.06.2	Practice of Test Technique 2: Biochemistry 1	2	- Practicing biochemistry testing is a subject that requires accuracy in solution preparation, especially standard solutions, buffer solutions, and setting and measuring biochemical parameters on semi-automatic or automatic biochemical machines, blood gas - electrolyte, 10 urine parameters meter - The above parameters serve teaching, scientific research and patient service to meet the requirements of training and clinical practice.	Department of Biochemistry
41	X.HHY.4.06.2	Practice of Test Technique 3: Hematology 1	2	Perform cytological, coagulation, and blood transfusion techniques and evaluate, interpret results at medical facilities.	Department of Hematology
42	X.GPB.4.03.2	Practice of Test Technique 4: Pathology1	2	The content includes practical skills of cytology sampling techniques; The cytological staining techniques are commonly used in the practice of Pathology; Analytical skills, identification and adjustment of cytological sampling and staining techniques	Department of Embryology, Pathology and Forensis Medicine
43	X.KST.4.04.2	Pratical Medical laboratory 5: Parasitology 1	2	The course introduces the specialized knowledge to use equipment, prepare testing chemicals, perform basic testing techniques in the field of medical parasitology; practice careful and accurate skills; and be honest, and good communication with colleagues, patients, and people in the community.	Department of Parasitology
44	X.PDT.5.03.2	Techniques of Microbiology and Parasitology in Hygiene and Food safety	2	**Microbiology section** The course introduces the basic knowledge about some microbial agents that cause food poisoning infections, how	Department of Microbiology, Department of Parasitology

No	Course code	Course name	Credit unit	Summary of the course content	Department
				to collect, preserve and transport certain types of samples in food microbiology testing, perform testing techniques: food microbiology testing, water microbiology testing, etc **Parasitology section** The course introduces the basic knowledge about parasitic agents related to hygiene and food safety, and testing techniques for pathogens parasites in food and the environment.	
45	X.PDT.5.04.2	Laboratory Management and Quality Assurance	2	**Hematology Section** Standards and testing methods to ensure the quality of hematology tests, blood and blood products **Biochemistry Section** This subject relates to laboratory management organization. The main content is the proper distribution of functions and tasks of parts in the laboratory as well as maintenance, periodic maintenance, and calibration of testing equipment to improve test quality. **Microbiology Section** The content of the course is the classification of microbiological laboratories and measures for ensuring the quality of microbiological tests. **Parasites Section** Basic contents of the standards – testing quality control. Correctly operating technical procedures, explaining, arguing, and solving quality-related problems of tests and experiments.	Department of Biochemistry Department of Parasitology Department of Microbiology Department of Hematology
46	X.GPB.4.02.2	Cytology 2	2	The content includes basic knowledge about preservation techniques, sample selection, histopathological sampling;	Department of Embryology, Pathology and Forensis Medicine

No	Course code	Course name	Credit unit	Summary of the course content	Department
				Techniques for fixing, handling, casting candles and cutting histopathological specimens; Tissue staining techniques are commonly used in the practice of Pathology; Basic knowledge of the theory and practice of several advanced techniques: immediate biopsy techniques and immunohistochemistry techniques.	
47	X.KST.5.05.2	Advanced Techniques in Parasitology	2	The course introduces the knowledge of advanced diagnostic tests for parasitic diseases including principles and methods of the following techniques: culture of invasive fungal diseases and antifungal susceptibility testing, protozoan culture and drug resistance testing, parasitic immunological diagnosis, and parasitic molecular diagnoses.	Department of Parasitology
48	X.HHY.5.07.2	Practice of Test Technique 6: Hematology 2	2	Perform cytological, coagulation, and blood transfusion techniques and evaluate, interpret results at the Department of Hematology and Blood Transfusion	Department of Hematology
49	X.GPB.5.05.2	Practice of Test Technique 7: Pathology 2	2	The content includes practical skills of cytology sampling techniques; The cytological staining techniques are commonly used in the practice of Pathology; Analytical skills, identification and adjustment of cytological sampling and staining techniques	Department of Embryology, Pathology and Forensis Medicine
50	X.VSY.5.07.2	Pratical Medical laboratory 8: Microbiology 2	2	The content of the module is performing culture methods to isolate and identify common pathogenic bacteria from various specimens; performing several serological and molecular techniques to determine microbiological infections in humans	Department of Microbiology

No	Course code	Course name	Credit unit	Summary of the course content	Department
51	X.KST.5.06.2	Pratical Medical laboratory 9: Parasitology 2	2	Proficient in advanced techniques in the field of medical parasites	Department of Parasitology
52	X.SHY.5.07.2	Pratical Medical laboratory 10; Biochemistry 2	2	Medical biochemistry is a basic medical subject but is closely related to clinics. The development of biochemical tests and techniques helps clinicians to have an early diagnosis and good monitoring of disease progression and effective treatment, increasing the quality of life for patients, reducing treatment costs for the family and society	Department of Biochemistry
53	X.NOI.5.01.2	Basic Endoscopy	2	Master the basic Instruments of Gastrointestinal Endoscopy Performing techniques to assist doctors in performing procedures and understand the indications, contraindications, and complications of some basic gastrointestinal endoscopy techniques. Mastering machine maintenance skills, washing and disinfecting gastrointestinal endoscopes. Preparing and monitoring patients before and after endoscopy. Designing gastrointestinal endoscopy room and storing endoscopy results	Department of Internal Medicine
54	X.PDT.5.05.2	Professional practice 1	2	**Biochemistry section** Biochemistry is a subject that requires accurate quantitative figures related to the diagnosis, monitoring, and treatment of patients. Going to the community helps students, trainees, or medical staff access work using machines and equipment as well as interpret actual clinical tests for patients. This also contributes to increasing test quality, increasing the reliability of biochemical tests for clinicians, helping to	Department of Biochemistry Department of Microbiology

No	Course code	Course name	Credit unit	Summary of the course content	Department
				diagnose and monitor diseases accurately, increasing treatment efficiency for patients, improving quality of life for patients, reducing the burden on medical costs for the community and society **Microbiology section** Participating in the practice of microbiological diagnostic techniques in a microbiology laboratory at the training institution. Students are arranged to support, participate in diagnostic testing activities in the laboratory, and perform the steps of microbiological diagnostic testing procedures: preparation, testing, evaluation results, and answering test results.	
55	X.PDT.5.06.2	Professional reality 2	2	**Hematology:** Students gain hands-on experience at a hematology and blood transfusion center to learn how to build, organize, and manage a laboratory. **Parasitology:** Students competently perform advanced testing techniques in the field of parasitology	Department of Hematology Department of Parasitology