

UNIVERSITY OF SANTO TOMAS
FACULTY OF PHARMACY
BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY – COURSE PROSPECTUS WITH DESCRIPTIONS

First Year – First Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CHEM 100	General Inorganic Chemistry	3	2	None
ENG 1	Introduction to College English	3	0	None
FIL 1	<i>Komunikasyon sa Akademikong Filipino</i>	3	0	None
MATH 101	College Algebra	3	0	None
MT 1	Introduction to Medical Technology with STS	3	0	None
PHISTCONS	Philippine History and Constitution	3	0	None
PHL 2	Logic	3	0	None
THY 1	Contextualized Salvation History	(3)	0	None
PE	Physical Education 1	(2)	0	None
ROTC	Military Science I (Reserve Officers' Training Corps) <i>* This is an elective. In case students will not choose ROTC in the first year, they will take NSTP in the second year.</i>	(3)	0	None
TOTAL		21	2	

CHEM 100 GENERAL INORGANIC CHEMISTRY

Description A concept- and theory-based lecture component of General Chemistry that deals with the essential concepts of matter, its properties and chemical behavior in relation to their atomic structure. Emphasis is on analysis of chemical reactions that will enhance students' problem solving and critical thinking skills significant to their future professional practice and ultimately to environmental and societal welfare.

ENG 1 INTRODUCTION TO COLLEGE ENGLISH

Description The course enhances the students' mastery of the basic communication skills in listening, speaking, reading, and writing.

Interactive activities have been designed to develop critical thinking and collaboration among students.



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FIL 1 KOMUNIKASYON SA AKADEMIKONG FILIPINO (Communication for Academic Filipino)

Description *Ang Filipino I ay isang metalinggwistik na pag-aaral ng wikang Filipino. Nakatuon ito sa estruktura, gamit, katangian at kahalagahan ng wikang Filipino sa akademikong larangan.*

Sa lapit multidisiplinaryo at paraang interaktibo, inaasahang matutukoy at matatalakay ang mga pangunahing kaalaman sa wikang ito.

Malilinigang dito ang mga kasanayan sa paggamit ng wikang Filipino tungo sa lalong mataas na komunikasyon sa kritikal na pagdidiskurso.

Filipino 1 is a metalinguistic study of Filipino language which focuses on the structure, usage, nature and its value in the academic field.

Using the interactive and multidisciplinary approach, it is expected to identify and discuss the fundamental concepts of Filipino and to develop the higher language / communication skills in a critical discourse.

MATH 101 COLLEGE ALGEBRA

Description This is a Mathematics course for freshmen, dealing with the fundamental principles and applications of algebra. It begins with sets, the number system, and algebraic expressions.

Focus is given on operations on polynomials, one-variable linear equations and inequalities, quadratic equations, two-variable linear equations, systems of linear equations, and functions and relations.

At the end of the course, students should develop the values of accuracy, analytical thinking and logical reasoning.



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MT 1 INTRODUCTION TO MEDICAL TECHNOLOGY WITH SCIENCE, TECHNOLOGY, AND SOCIETY

Description This course is designed to introduce students to the major disciplines (Hematology, Histopathology, Microbiology, Clinical Chemistry, Blood Banking etc.) in the Medical Technology Profession. In addition, students are introduced to the structure of clinical laboratory and pathology services and an examination of the roles and functions of Medical Technologists. Students are acquainted with professional practice issues including ethical practices in medical technology and laboratory-based research and introduction to environmental and occupational health and safety issues affecting laboratory practices. The course includes discussion on the historical foundations of the profession, its impact to society and its contribution to other medical sciences.

PHISTCONS PHILIPPINE HISTORY AND CONSTITUTION

Description This course discusses significant events in the history of the Philippines from the early period to contemporary, the Philippine Government and the fundamental law that governs the land.

It provides the historical explanation of the formation of the state and its basic laws.

Students are expected to be cognizant of the historical background of the formation of the nation-state and how it functions to serve the Filipino people.

PHL 2 LOGIC

Description This course exposes the students with the fundamental concepts and principles in the study of human behaviour, sensory modalities, perception, consciousness, and motivation, emotion, stress and health and personality theories

This course provides the students with a broad, eclectic understanding on the importance of understanding human behaviour by addressing the wide range of issues and problems encountered in everyday life.

Each student is expected to apply basic psychological concepts and principles in understanding and enhancing human behaviour.



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THY 1 CONTEXTUALIZED SALVATION HISTORY

Description This Course is a critical and reflective look into the different moments of God's intervention in the history of humanity, gradually disclosing Himself and His plan of salvation through persons and events, until this revelation reached its fullness in the incarnation of His Son, our Lord Jesus Christ.

The whole history of salvation has for its central figure the person of Jesus Christ. Hence, salvation history, in its very nature, is Christocentric. It is in Jesus that the entire history of humanity finds meaning. It is also to him that history tends. Because of this, all events and persons in the history of salvation are seen in the light of the person of Jesus, apart from whom they have no value. The course shall make use of the Sacred Scriptures as its primary source since it is the Bible that contains the record of God's interventions with humanity and the testimonies of the members of early Church about their encounters with Jesus.

The course, therefore, inevitably involves the actual reading of Sacred Scriptures in class in order to discover how God's Word, enveloped in human words, continues to communicate to humanity today; and at the same time to facilitate a dialogue between the text of the Bible and the day-to-day life of the Thomasian students.



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Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
BIOSCI	Biological Sciences	2	1	None
CHEM 301	Analytical Chemistry I	3	2	CHEM 100
ENG 2	Reading and Thinking Skills for Academic Study	3	0	ENG 1
FIL 2	<i>Pagbasa at Pagsulat tungo sa Pananaliksik</i>	3	0	FIL 1
MATH 102	Trigonometry	3	0	None
PHL 4	Philosophy of Man	3	0	None
PSY 1	General Psychology	3	0	None
THY 2	Church and Sacraments	(3)	0	THY 1
PE	Physical Education 2	(2)	0	
ROTC	Military Science II (Reserve Officers' Training Corps) * This is an elective. In case students do not take ROTC in the first year, they will take NSTP in the second year instead.	(3)	0	
TOTAL		21	3	

BIOSCI BIOLOGICAL SCIENCES

This course is designed to understand the essential concepts and applications of biology and biological processes with reference to their effects on human health and the environment.

Description

This course will give more emphasis on the concepts of biology such as cells, unity and diversity and genes, plants and animals' structures and functions. It will also provide laboratory work on light microscopy and frog dissection to reinforce students' knowledge and understanding of life.

At the end of this course, the students are expected to exhibit mastery of knowledge and skills in analyzing plant and animal structures and functions; and apply critical thinking skills and concepts of scientific method in interpreting data and results with accuracy, precision, and reliability.



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CHEM 301 ANALYTICAL CHEMISTRY I

The course deals with the concepts of qualitative and quantitative chemistry with emphasis on chemical kinetics, chemical equilibria, volumetric and instrumental methods of analysis.

Description The course aims to provide Medical Technology students with the basic principles and concepts of analytical chemistry in preparation for their field of study. The course will expose the students to different methods of analysis, their applications and limitations, and equip the students with problem solving skills. The course will introduce a wide range of techniques useful in modern analytical chemistry.

ENG 2 READING AND THINKING SKILLS FOR ACADEMIC STUDY

Description The course aims primarily to develop students' reading and thinking skills for academic study.

It equips students with an understanding of the reading skills and thinking processes; and effective higher order reading strategies for understanding academic texts.

It also aims to prepare them for academic writing.

FIL 2 PAGBASA AT PAGSULAT TUNGO SA PANANALIKSIK (Reading and Writing Towards Research)

Description *Ang Filipino 2 ay 3-yunit na kurso at ikalawa sa serye ng mga kurso sa ilalim ng kurikulum sa Filipino sa antas kolehiyo.*

Nakasentro ang kursong ito sa paglilinang sa kasanayan at kahusayan ng mga mag-aaral sa matalino at makatuwirang pagbabasa at pagsusulat ng mga akademikong babasahin/sulatin upang makabuo ng mga makabuluhang pananaliksik sa kanilang larangang kinabibilangan gamit ang wikang Filipino.

Filipino 2 aims to develop the proficiency of students in critical reading and academic writing that will guide them to do meaningful researches related to their discipline using the Filipino language.



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MATH 102 TRIGONOMETRY

Description This is a course aimed to develop and enhance the student's mathematical concepts and improve their logical and critical thinking.

It focuses on two-coordinate coordinate system, circular/trigonometric functions, angles, right and oblique triangles, fundamental identities, trigonometric equations, inverse trigonometric functions, logarithmic and exponential functions.

At the end of the course, the students are expected to appreciate and demonstrate mastery in understanding the basic concepts and principles in trigonometry and apply these concepts and principles to solve problems in some fields where trigonometry is involved.

PHL 4 PHILOSOPHY OF MAN

Description

PSY 1 GENERAL PSYCHOLOGY

Description This course exposes the students with the fundamental concepts and principles in the study of human behaviour, sensory modalities, perception, consciousness, and motivation, emotion, stress and health and personality theories

This course provides the students with a broad, eclectic understanding on the importance of understanding human behaviour by addressing the wide range of issues and problems encountered in everyday life.

Each student is expected to apply basic psychological concepts and principles in understanding and enhancing human behaviour.

THY 2 CHURCH AND SACRAMENTS

Description The course deals with the Church and Sacraments. The first part is about the nature, origin, characteristics, and mission of the Church, as having originated from the Trinitarian Community of God Whose love was revealed in the incarnate Son, Jesus Christ Who accomplished God's plan of salvation. The second part of the course deals with the liturgical life of the Church celebrated specifically through the Sacraments as visible signs of God's grace in the believing, worshipping and serving community.



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CHEM 200	Organic Chemistry	3	2	CHEM 100
COMP 103	Introduction to Computer with Applications	2	1	None
ENG 4	Oral Communication in Context	3	0	ENG 1, ENG 2
PHL 5	Christian Ethics	3	0	THY 1, THY 2
PHYANA	Physiology-Anatomy	3	2	None
PHYS 201	General Physics	3	1	MATH 102
SA	Socio-Anthropology	3	0	None
PE	Physical Education 3	(2)	0	None
NSTP	Literacy Training Service (LTS) I <i>or</i> Civic Welfare Training Service (CWTS) I <i>* This is an elective. Either LTS or CWTS is chosen by the student who has not elected to take ROTC in the first year.</i>	(3)	0	
TOTAL		25	6	

CHEM 200 ORGANIC CHEMISTRY

Description Introduces students to organic chemistry as a discipline. Deals with the different classes of organic compounds, their structures, properties, re-activities, and reaction mechanisms. Students are expected to apply chemistry concepts in the different biochemical and health-related fields of study.

COMP 103 INTRODUCTION TO COMPUTER WITH APPLICATIONS

Description The course provides computer literacy to the students of Faculty of Pharmacy. Topics include Microsoft Windows, internet, Microsoft Office, with emphasis on applications of Word, Excel, Powerpoint, Publisher, and Macromedia Flash. This consists of two hours lecture and two hours laboratory (hands-on) weekly.



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ENG 4 ORAL COMMUNICATION IN CONTEXT

Description The course aims to develop students' speaking skills for effective communication in diverse contexts.

It likewise endeavors to enhance their listening skills in carrying out meaningful transactions needed in real communication situations making them communicatively competent.

PHL 5 CHRISTIAN ETHICS

Description The course provides an overview of Christian Ethics which is designed to help students begin answering some fundamental questions about Christ-centered life and what makes it worth living.

It is divided into three parts: Human Person's Ethics of Being and Doing, introduces one to the realities of moral life, to an analysis of the moral process (constituents, sources and modifiers of human acts), to the relationship of ethics and morality to religious faith, and to the specific nature of Christian morality; Unit 2, Realizing Human Dignity and Genuine Freedom, deals with the human person as a moral agent, human freedom, conscience, sin and moral obligation in the light of the Word of God in the Sacred Scriptures and in the teachings of the Church enshrined in Her Traditions, Pronouncements and Documents; and, Unit 3, the Christian Response to some Special Contemporary Moral Issues, gives special attention to the Ten Commandments in highlighting the moral principles and virtues vis-à-vis some contemporary moral issues.

The course seeks the formation of a Christian conscience of the students to enable them to make correct judgments in their everyday moral decisions and choices especially about specific moral issues they are encountering and thus lead them towards committed moral living.

PHYANA PHYSIOLOGY-ANATOMY

Description The course deals with the study of the structures and functions of the major organs and organ systems of the human body. It introduces students to the language of anatomy, as well as, the fundamental concepts of cellular structures and functions, integration, organization, and control of all body systems. It would prepare the students in understanding the anatomic changes and physiologic deviation caused by human disease and disorders.
Normal human anatomic structures and physiologic mechanisms.

At the end of this course, the students are expected to identify the fundamental human anatomy and explain physiologic processes.



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PHYS 201 GENERAL PHYSICS

Description Physics 201 (Lecture) is a 3-unit introductory algebra-based physics for Medical Technology students of the Faculty of Pharmacy. It is supplemented by a 1-unit laboratory. Both the lecture and laboratory components cover mechanics, temperature and heat, fluids and electricity.

Selected topics in magnetism, optics and modern physics may be included by the professor in the course if time permits.

SA SOCIO-ANTHROPOLOGY

Description The course introduces the discipline of Sociology and Anthropology as social sciences, as professions and as ways of life.

It explores selected fundamental concepts in the study of Philippine society and culture and its relation to the global world using basic theories, research methodologies, and substantive issues defining the scientific practices of Sociology and Anthropology.

The course exposes students to the unique use of the sociological imagination and anthropological perspective in understanding the world they live in so that they may find it useful, relevant, practical, and meaningful to their lives, no matter what life choices and trajectories they would take or endure in the future.



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Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CHEM 600	Biochemistry	3	2	
COMP 103	Introduction to Computer with Applications	2	1	
HHISTCG	Human Histology with Cytogenetics	3	1	PHYANA
LIT 102	Philippine Literatures3	3	0	None
MTEDUC	Principles and Strategies of Teaching in Health Education	3	0	
PHAR	Pharmacology	2	0	
RC	Rizal Course	3	0	None
SCL 3	The Social Teachings of the Church	3	0	PHL 5, THY 1, THY 2
PE 4	Physical Education	(2)	0	
NSTP	Literacy Training Service (LTS) I or Civic Welfare Training Service (CWTS) I <i>* This is an elective. Either LTS or CWTS is chosen by the student who has not elected to take ROTC in the first year.</i>	(3)	0	
TOTAL		18	6	

CHEM 600 BIOCHEMISTRY Description

COMP 103 INTRODUCTION TO COMPUTER WITH APPLICATIONS Description

The course provides computer literacy to the students of Faculty of Pharmacy. Topics include Microsoft Windows, internet, Microsoft Office, with emphasis on applications of Word, Excel, Powerpoint, Publisher, and Macromedia Flash. This consists of two hours lecture and two hours laboratory (hands-on) weekly.

HHISTCG HUMAN HISTOLOGY WITH CYTOGENETICS Description

The course includes the study of the fundamental of cells, giving emphasis on the structural functional relationship of the various cellular components, especially the cytoplasmic organelles and inclusion bodies. Moreover, the basic and key concepts on genetics which includes study of genes. Most important of all, it deals with thorough study of the basic tissue types, subtypes and specific subtypes, general characteristics, over-all structure and functions. Moreover, the course provides basic knowledge on the microscopic anatomy and functions of selected organ systems of the body.



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LIT 102 PHILIPPINE LITERATURES

Description The course is designed to develop among students an awareness, appreciation, and critical view of the depth and breadth of our country's literature in order to foster among them the desire for truth, love for country and nature, and respect for peoples and cultures, which will eventually constitute a competent, compassionate, and committed Thomasian.

The course is focused on representative literatures from the regions, tackling the wide array of Filipino encounters and experiences that are expressed through themes such as gender, racial identity, class and history.

The students are expected to write a critique on a Filipino novel, epic, drama or any other genre. They are also expected to transform or adapt Philippine literary texts into other art forms or media.

MTEDUC PRINCIPLES AND STRATEGIES OF TEACHING IN HEALTH EDUCATION

Description This is a theory and practice based course that focuses on health instruction and teaching. It provides insights and understanding of the different concepts of health and health education, teaching and learning theories, strategies and methodologies in the teaching and learning process, and medical technology in health teaching activities.

At the end of this course, the students are expected to exhibit mastery of knowledge in the historical development and concomitant issues that go along with the trends of health education; the different teachings and learning theories in health education; demonstrate different teaching methodologies and strategies in various clinical and community setting; and construct health teaching plan based on the medical laboratory process and teaching strategies.

PHAR PHARMACOLOGY

Description The course deals with the study of basic concepts of pharmacology including biochemical and physiological actions, therapeutic uses, adverse drug reactions and drug interactions in relation to the functions, and control of body systems. The students will engage in the analysis and application of these concepts in various real-life settings as they acquire a basic understanding of pharmacological concepts to selected medical conditions and common clinical cases. Emphasis on Drug Pharmacokinetics and Pharmacodynamics.

At the end of this course, the students are expected to discuss the mechanism of action of chemotherapeutic drugs and practice rational drug use.



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RC RIZAL COURSE

Description This course discusses the life, ideas and ideals of Jose Rizal. It aims to provide an in-depth discussion on how Rizal contributed to the development of Filipino nationhood.

The focus of this course is to depict Rizal, along with the other national heroes in the context of Philippine national history and that Rizal as the foremost Filipino hero helped inspire a national movement that reawakened Filipino nationalism.

It is expected that the students develop a critical and analytical understanding of Rizal and his achievements along with other heroes.

This understanding will be in the context of Philippine national history.

SCL 3 THE SOCIAL TEACHINGS OF THE CHURCH

Description The course is an in-depth thematic study of Catholic social thought as found in the Gospel, in the tradition of primitive Christianity, the Fathers of the Church, the official documents of the social teachings of the Church and the lived experience of peoples.

As Mother and Teacher, the Church keeps alive in the personal and collective memory of the people the saving mission of Christ, who became all things to all human beings except sin, and its implication to the final destiny of the human person. She proposes individual and societal life witnessing in the very real experiences of the human person and the communities of peoples in the socio-cultural, economic, political, technological and ecological environments.

As a true disciple of the Risen Christ and moved by the Spirit, the human person is empowered and challenged to bring about social transformation and development by practical competent acts of compassion and commitment to truth in love.



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Third Year – First Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
BIOSTAT	Biostatistics including Prevention and Community Nutrition	2	1	MATH 101, CHEM 600
CLCH 1	Clinical Chemistry I	4	1	MT 1A, CHEM 301, CHEM 600, PHYANA
ENG 3	Academic Writing Skills	3	0	ENG 1, ENG 2
HEMA 1A	Clinical Hematology I	3	1	None
MICR 231	Bacteriology	3	2	None
PARA	Parasitology	3	0	None
SCL 9	Marriage and Family	3	0	PHL 5, SCL 3, THY 1, THY 2
TOTAL		20	6	

BIOSTAT BIostatistics Including Prevention and Community Nutrition

Description This is a course introduces the basic concepts and methods of statistics in medical laboratory science.

Topics include basic probability distributions, descriptive statistics and introduction to inferential statistics, with applications in clinical chemistry, clinical microscopy, hematology, microbiology and other areas of preventive medicine and epidemiology. The use of SPSS will also be introduced.

A research output, using clinical laboratory data, demonstrating the application of statistics is required at the end of the course.

CLCH 1 CLINICAL CHEMISTRY I

Description The course deals with assays of physiologically important substances found in the blood. This involves the knowledge of analytical methods and instrumentation and an evaluation of the accuracy and precision of the procedures using statistical techniques. Principles of the methods, chemical reactions, effects of physical variables on the reactions and purpose of each reagent used are emphasized.

This course will give more emphasis on the detection of biomarkers used for the diagnosis of human diseases. Clinical significance of each biomarker and methods of measurements will be discussed



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ENG 3 ACADEMIC WRITING SKILLS

Description This course centers on honing college students' writing and research skills for academic study.

It equips students with effective techniques in writing expository, persuasive, and argumentative compositions and any other academic texts, e.g., library, term, and research papers.

This course engages also students to craft academic papers with strong, effective, and clear theses, body paragraphs, and conclusions. It likewise helps them edit their writing to be more formal and appropriate. It also provides the students with various strategies for generating ideas about a topic and teaches them organizational patterns, topic development, and methods for making their writing more coherent. Additionally, this course helps the students develop revision strategies that can be used in other courses and trains them to use and cite references properly in their writing to avoid plagiarism.

HEMA 1A CLINICAL HEMATOLOGY I

Description This 4-unit course deals with the study of blood as a tissue and the pathophysiology of the cellular elements of the blood. The course plays emphasis on specimen collection and handling, laboratory safety and quality assurance. Moreover, routine manual laboratory procedures and red blood cell and white blood cell abnormalities are also discussed.

MICR 231 BACTERIOLOGY

Description This is a 5-unit course that covers the morphology and physiology of bacteria, rickettsiae and other significant atypical bacteria, and their role in infection and immunity. Emphasis is made on their isolation and identification and susceptibility testing as an aid in laboratory diagnosis.

PARA PARASITOLOGY

Description This 3-unit course is a study of animal parasites which are of medical importance to man especially those commonly found in the Philippines. Emphasis is given on the characteristics of parasites from the point of view of morphology, life cycle, epidemiology, symptomatology, pathogenicity, laboratory diagnosis of their specific diseases, distribution and life cycles as well as preventive measures against infection.



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SCL 9 MARRIAGE AND FAMILY

Description The course Marriage and Family is an inter-disciplinary approach to preparation for and understanding of love, marriage and family life includes the Biblical, theological, sacramental, canonical, legal, psychological and sociological dimensions.

It is rooted in the Catholic spirituality that promotes the culture and transmission of life, faithful to the teachings of the Church, it includes education in human sexuality and responsible parenthood based on the magisterial documents.



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Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
BB 1	Immunoematology (Blood Banking)	2	1	CHEM 600, HEMA 1
CLCH 2	Clinical Chemistry II (Endocrinology, Toxicology, and Drug Testing)	4	1	CLCH 1
CLMC 1	Clinical Microscopy	2	1	CLCH 1, HEMA 1, MICR 231, PARA
GPHT 1	General Pathology and Histopathologic Techniques	2	1	HHISTCG, MT 1A
HEMA 2	General Hematology II	2	1	HEMA 1
MCRBIO 2	Mycology and Virology	2	0	MICR 231, MT 1A
MTLB	Medical Technology Laws and Bioethics	3	0	MTLB
SI 1	Immunology and Serology	3	1	CHEM 600, HHISTCG, MICR 231, MT 1A, PARA, PHYANA
TOTAL		18	6	

BB 1 IMMUNOHEMATOLOGY (BLOOD BANKING)

Description Blood Banking (Immunoematology and Transfusion Medicine) deals with the study of immunologic principles applied in blood group specific antigens and antibodies and its application in transfusion medicine. It also deals with mechanisms of blood typing and crossmatching, antihuman globulin testing, detection and identification of antibodies, screening of donors for blood donation, bleeding techniques, preparation of blood components and blood products, their storage and disposal with emphasis on quality systems.

Blood banking is focused on training students to develop critical thinking in addressing concepts of blood processing and usage. Moreover, the course provides understanding to resolutions provided to discrepancies and problems arising therein.

At the end of this course, the students are expected to demonstrate different immunoematologic principles employing old and current technologies; analyze common laboratory errors occurring during pre-analytical, analytical, post-analytical phases in blood processing; develop dexterity in blood specimen handling and processing in different laboratory exercises; and critique actual cases in transfusion medicine.



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CLCH 2 CLINICAL CHEMISTRY II (ENDOCRINOLOGY, TOXICOLOGY, AND DRUG TESTING)

Description The course is a continuation of Clinical Chemistry 1, which deals with the quantitative measurement of biochemical substances in body fluids such as blood, urine, sweat, synovial fluid, cerebrospinal fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid, and gastric fluid. This involves the knowledge and understanding of the basic concepts and principles of their metabolism, laboratory analyses, and pathophysiology. It also provides understanding on laboratory mathematics, instrumentation, specimen collection, and processing. Quality assurance and laboratory safety are given due emphasis.

This course will give more emphasis on the detection of biomarkers used for the diagnosis of human diseases. Clinical significance of each biomarker and methods of measurements will be discussed.

At the end of this course, the students are expected to demonstrate mastery of knowledge and skills in the measurement of biomarkers used for disease diagnosis; apply accuracy and precision in generating and analyzing laboratory results; and exemplify excellence in performing laboratory analyses.

CLMC 1 CLINICAL MICROSCOPY I

Description This is a 3-unit course that deals with the study of medically important parasites, specifically those commonly found in the Philippines. The course places emphasis on the biology, lifecycle, morphology, pathogenesis, epidemiology and laboratory diagnosis of each parasite. Moreover, preventive and control measures against parasitic infections are also discussed. At the end of this course, the students are expected to discuss the biology and morphology of each parasite; the important aspects of the life cycle of each parasite discussed in class; identify the important diagnostic stages of each parasite discussed in class; the different diagnostic procedures used to identify these parasites; demonstrate the proper technique in performing the common tests used in medical parasitology; discuss the diseases associated to each medically important parasite; discuss the epidemiology & the different preventive and control measures for each medically important parasite.



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GPHT 1 GENERAL PATHOLOGY AND HISTOPATHOLOGIC TECHNIQUES

Description The course is divided into four parts. The first part deals with the introduction of basic pathology that focuses on disease process, correlating the etiology of disease with the course of development of anatomic and clinical changes brought about by the disease, cellular adaptation, neoplasia, and an overview of the post-mortem examination (autopsy). The second part deals with the study of the Histopathologic Techniques essential in the production of histologic slides for the microscopic diagnosis of disease processes by H&E including special staining procedures. The third part consists of exfoliative cytology which deals with the study and identification of cell samples from gynecologic (cervicovaginal or Papanicolaou) cytology, non-gynecologic (body fluid) cytology, and cytologic techniques. The fourth part deals with the special techniques including basic immunohistochemistry, application of diagnostic tumour and molecular markers, and the role of the frozen section in clinical and pathology practice.

At the end of this course, the students are expected to discuss the basic concept of disease formation; explain the physiologic changes brought about by the various diseases; discuss step-by-step procedure in tissue preparation; recognize the concepts of quality assurance program in Histopathology laboratory; demonstrate the necessary skills required in the preparation of slides for microscopic examination of tissues from fresh state to mounted state; apply the knowledge acquired about diseases in daily living; and practice the value of honesty, critical thinking, empathy and value for life in the Medical Technology profession.

HEMA 2 CLINICAL HEMATOLOGY

Description This 4-unit course deals with the study of blood as a tissue and the pathophysiology of the cellular elements of the blood. This course deals with the study blood as a tissue and the pathophysiology and the mechanism of coagulation and hemostasis, with emphasis is on laboratory diagnostic procedures.



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MCRBIO 2 MYCOLOGY – VIROLOGY

Description This is a 2-unit lecture course that deals with the study of the morphology, biologic characteristics and distribution of medically important fungi (molds and yeasts) and viruses that cause disease among humans.

The course places emphasis on the identification and detection of fungal and viral agents using diagnostic laboratory methods. It also emphasizes on the study of the associated diseases, distribution, pathology, and the prevention and control of the spread of these pathogens.

At the end of this course, the students are expected to identify and differentiate the, medically important fungi and viruses using various laboratory methods; determine the diseases associated to each viral and fungal pathogens; and identify the different preventive and control measures for each viral and fungal pathogens.

MTLB MEDICAL TECHNOLOGY LAWS AND BIOETHICS

Description This course deals with various laws related to the Medical Technology/Medical Laboratory Science profession in the Philippines with emphasis on the Philippine Medical Technology Act of 1969 (RA 5527) and its amendments. It also includes the study of Code of Ethics of Medical Technologists and Bioethics. Bioethics focuses on the basic ethical principles, major bioethical principles and its application to health and human life.

At the end of this course, the students are expected to practice the rights and privileges, duties and responsibilities of a medical technologist; apply the different laws, presidential decrees, administrative orders, issuances associated with the practice of the medical technology profession; exhibit the ethical principles relating to health and human life; justify issues related to ethics, bioethics health ethics, and professional ethics; and internalize the necessary virtues as health care professionals.



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SI 1 IMMUNOLOGY AND SEROLOGY

Description Immunology deals with the study of the structure and functions of the immune system, as well as the characteristics and properties of antigens, antibodies, and their interaction in humoral and cellular responses. Serology deals with the detection, identification and quantitation of antigens, antibodies, and other immune factors in the serum.

It deals with the basic concepts of antigen-antibody and their interactions. Special topics on Immunopathology, such as Hypersensitivity Reactions, Autoimmune and Immunodeficiency Disease, Tumor Immunology and Transplantation are also discussed. Likewise topics on quality control and assurance and laboratory safety practices are discussed.

At the end of this course, the students are expected to correlate the basic concepts of Immunology and Serology and be able to distinguish the antigen, antibody as well as antigen-antibody complexes with the use of different diagnostic techniques not limited to classroom set-up. The students must be able to relate theoretical concepts and case studies to actual practice of clinical immunology necessary for competent public health care delivery. Also, students must be able to design a tool for the diagnosis of infectious diseases and develop a novel technique relevant to the advancement in the field of medical technology in order to adapt the knowledge gained in clinical immunology and in community works to ensure incorporation of Thomasian ideals and utilize the advances in medical laboratory science in responding to global issues.



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Fourth Year – First Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
INTERN 1	Clinical Internship I	0	15	BB 1, BIOSCI, BIOSTAT, CHEM 100, CHEM 200, CHEM 301, CHEM 600, CLCH 1, CLCH 2, CLMC 1, COMP 103, CPHC, ENG 1, ENG 2, ENG 3, ENG 4, FIL 1, FIL 2, GPHT 1, HEMA 1, HEMA 2, HETAR, HHISTCG, INTERN 1, LABMGT, LIT 102, MATH 101, MATH 102, MICR 231, MCRBIO 2, MT 1A, MTEDUC, MTLB, PARA, PHAR, PHISTCONS, PHL 2, PHL 4, PHYANA, PHYS 201, PSY 1, RC, SA, SCL 3, SCL 9, SI 1, THY 1, THY 2
LABMGT	Clinical Laboratory Management	2	0	BB 1, CLCH 1, CLCH 2, CLMC 1, GPHT 1, HEMA 1, HEMA 2, MCRBIO 2, MICR 231, MTLB, PARA, SI 1
SEM I	Seminar I	3	0	BB 1, CLCH 1, CLCH 2, CLMC 1, GPHT 1, HEMA 1, HEMA 2, MCRBIO 2, MICR 231, MTLB, PARA, SI 1
THS I	Thesis I	2	0	BB 1, CLCH 1, CLCH 2, CLMC 1, GPHT 1, HEMA 1, HEMA 2, MCRBIO 2, MICR 231, MTLB, PARA, SI 1
TOTAL		7	15	

INTERN I CLINICAL INTERNSHIP I

Description This 15-unit clinical internship training is a one-year program composed of an intensive practical and theoretical training in the different sections in the clinical laboratory namely: Clinical Chemistry, Hematology, Immunohematology (Blood Banking), Immunology, Serology, Microbiology, urinalysis and other body fluids (Clinical Microscopy), Parasitology, Histopathology, Cytology and other emergent technologies. It also emphasizes the development of managerial skills and proper value system.

LABMGT CLINICAL LABORATORY MANAGEMENT



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Description This course deals with the study of basic concepts of management as applied in the administrative aspects of laboratory operations.

Specifically, it deals with planning, organizing, leading/directing, controlling/evaluating the human, physical and financial resources of the clinical laboratory. Emphasis is also given on quality systems and safety.

At the end of this course, the students are expected to know the basic concepts of laboratory management and be able to apply these concepts in the administrative aspects of laboratory operations.

SEM I SEMINAR I

Description This course covers some topics and developments in various medical technology sections.

This course will give more emphasis on the special topics and advances in Clinical Chemistry, Immunology and Serology, and Hematology.

At the end of this course, the students are expected to exhibit mastery of knowledge and concepts in the major disciplines of Medical Technology; identify the different special tests performed by clinical laboratory professionals in Clinical Chemistry, Immunology and Serology, and Hematology; and apply their knowledge during internship.



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THS I THESIS I

Description Thesis writing is a 2-unit course that orients student in research undertakings. Students are trained to experience scientific works that will provide explanations to problems raised in the medical technology field. This serves also as an avenue to apply knowledge on technical writing and biostatistics.

Thesis writing is focused on training students to conduct scientific research, present ion scientific fora and publish research articles on scholarly journals.

At the end of this course, the students are expected to acquire scientific skills in resolving issues arising from the medical technology practice; develop his research potentials through health related endeavors; actively participate in the research undertakings of group from where he/she is assigned; submit a scholarly output in the form of a thesis proposal (TW1) and an approved thesis manuscript; dynamically involve himself/herself in the preparation, revision of the manuscript and presentation of the research paper during the final oral defense; and practice the values of a true Thomasian student by understanding fully of the mission-vision of the University and Department.



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Fourth Year – Second Term / Semester

Abbreviation	Title	Lec. Units	Lab. Units	Pre-Requisites
CPH	Community and Public Health	2	3	BB 1, CLCH 1, CLCH 2, CLMC 1, GPHT 1, HEMA 1, HEMA 2, MCRBIO 2, MICR 231, MT 1A, MTLB, PARA
INTERN II	Clinical Internship II	0	15	BB 1, BIOSCI, BIostat, CHEM 100, CHEM 200, CHEM 600, CLCH 1, CLCH 2, CLMC 1, COMP 103, CPHC, ENG 1, ENG 2, ENG 3, ENG 4, FIL 1, FIL 2, GPHT 1, HEMA 1, HEMA 2, HETAR, HHISTCG, INTERN 1, LABMGT, LIT 102, MATH 101, MATH 102, MICR 231, MCRBIO 2, MT 1A, MTEDUC, MTLB, PARA, PHAR, PHISTCONS, PHL 2, PHL 4, PHYANA, PHYS 201, PSY 1, RC, SA, SCL 3, SCL 9, SEM 1, SI 1, THS 1, THY 1, THY 2
SEM 2	Seminar II	3	0	BB 1, BIOSCI, BIostat, CHEM 100, CHEM 200, CHEM 600, CLCH 1, CLCH 2, CLMC 1, COMP 103, CPHC, ENG 1, ENG 2, ENG 3, ENG 4, FIL 1, FIL 2, GPHT 1, HEMA 1, HEMA 2, HETAR, HHISTCG, INTERN 1, LABMGT, LIT 102, MATH 101, MATH 102, MICR 231, MCRBIO 2, MT 1A, MTEDUC, MTLB, PARA, PHAR, PHISTCONS, PHL 2, PHL 4, PHYANA, PHYS 201, PSY 1, RC, SA, SCL 3, SCL 9, SEM 1, SI 1, THS 1, THY 1, THY 2



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THS 2	Thesis II	2	0	BB 1, BIOSCI, BIostat, CHEM 100, CHEM 200, CHEM 600, CLCH 1, CLCH 2, CLMC 1, COMP 103, CPHC, ENG 1, ENG 2, ENG 3, ENG 4, FIL 1, FIL 2, GPHT 1, HEMA 1, HEMA 2, HETAR, HHISTCG, INTERN 1, LABMGT, LIT 102, MATH 101, MATH 102, MICR 231, MCRBIO 2, MT 1A, MTEDUC, MTLB, PARA, PHAR, PHISTCONS, PHL 2, PHL 4, PHYANA, PHYS 201, PSY 1, RC, SA, SCL 3, SCL 9, SEM 1, SI 1, THS 1, THY 1, THY 2
TOTAL		7	18	

CPH COMMUNITY AND PUBLIC HEALTH

Description This is a 5-unit course that deals with the study of the foundations of Community and Public Health that includes Epidemiology, Demography, Health Education & Promotion, Environmental and Occupational Health and Tropical Medicine in the context of Medical Technology Practice in the Philippines.

The course places emphasis on the application of these basic public health concepts in the formulation, implementation and evaluation of a community health development plan based on the prevailing health problems in the community (in compliance with the CHED MEMO ORDER No. 14 series of 2006).

At the end of this course, the students are expected to discuss the basic principles and concepts of Public Health; discuss the implication of Public Health concepts on its subdisciplines, namely: Health Education & Promotion, Epidemiology & Demography and Environmental & Occupational Health; conduct a comprehensive community assessment leading to relevant community health problem identification & prioritization; and implement their proposed community health intervention strategies to improve the health of their target community.

INTERN 2 CLINICAL INTERNSHIP II

Description This 15-unit clinical internship training is a one-year program composed of an intensive practical and theoretical training in the different sections in the clinical laboratory namely: Clinical Chemistry, Hematology, Immunohematology (Blood Banking), Immunology, Serology, Microbiology, urinalysis and other body fluids (Clinical Microscopy), Parasitology, Histopathology, Cytology and other emergent technologies. It also emphasizes the development of managerial skills and proper value system.



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SEM 2 SEMINAR II

Description This course covers some topics and developments in various medical technology sections.

This course will give more emphasis on the special topics and advances in Clinical Chemistry, Immunology and Serology, and Hematology.

At the end of this course, the students are expected to exhibit mastery of knowledge and concepts in the major disciplines of Medical Technology; identify the different special tests performed by clinical laboratory professionals in Clinical Chemistry, Immunology and Serology, and Hematology; and apply their knowledge during internship.

THS 2 THESIS II

Description Thesis writing is a 2-unit course that orients student in research undertakings. Students are trained to experience scientific works that will provide explanations to problems raised in the medical technology field. This serves also as an avenue to apply knowledge on technical writing and biostatistics.

Thesis writing is focused on training students to conduct scientific research, present in scientific fora and publish research articles on scholarly journals.

At the end of this course, the students are expected to acquire scientific skills in resolving issues arising from the medical technology practice; develop his research potentials through health related endeavors; actively participate in the research undertakings of group from where he/she is assigned; submit a scholarly output in the form of a thesis proposal (TW1) and an approved thesis manuscript (TW2); dynamically involve himself/herself in the preparation, revision of the manuscript and presentation of the research paper during the final oral defense; and internalize the values of a true Thomasian student by understanding fully of the mission-vision of the University and the Department.

