

1. Program Learning Outcomes (PLOs)

The Program Learning Outcomes (PLOs) cover 4 key areas as follows:

Knowledge	PLO1	Able to integrate basic medical science knowledge with Traditional Chinese Medicine.
	PLO2	Possess knowledge of medical ethics, professional codes of conduct, and laws related to the practice of the art of healing in Traditional Chinese Medicine.
	PLO3	Possess clinical knowledge for diagnosis, treatment, and disease prevention using Traditional Chinese Medicine science.
	PLO4	Possess knowledge of research methodology and biostatistics.
Skills	PLO5	Able to diagnose diseases, treat patients, and maintain medical records systematically and accurately.
	PLO6	Able to communicate effectively in both Chinese and English.
	PLO7	Possess digital literacy skills, including the beneficial and professionally appropriate use of medical technology.
Ethics	PLO8	Demonstrate appropriate virtue, ethics, and professional codes of conduct.
Character	PLO9	Learners possess critical thinking skills and creative initiative.
	PLO10	Demonstrate leadership, responsibility, and the assertiveness to do what is right.
	PLO11	Accept social differences and value arts and culture.
	PLO12	Inquisitive, with a commitment to continuous self-development and lifelong learning.
	PLO13	Possess a trustworthy personality and the capability to provide Traditional Chinese Medicine treatments.

2. Curriculum Structure

Students must register for a total of no less than 244 credits, completing courses according to the structure, components, and requirements of the curriculum as follows:

1) General Education Courses	30	Credits
2) Specialized Courses	208	Credits
2.1) Foundational Course Group (Medical Science)	42	Credits
- Foundational Science (10 Credits)		
- Foundational Medical Science (32 Credits)		
2.2) Language for TCM Course Group	43	Credits
2.3) Specific Professional Course Group (TCM	93	Credits
2.4) Clinical Clerkship Group	30	Credits
3) Free Elective Courses	6	Credits
total	244	Credits

Note: The Mandarin Chinese proficiency criteria used for this curriculum have been mutually agreed upon by Chulabhorn International College of Medicine, Thammasat University, and Chengdu University of Traditional Chinese Medicine, People's Republic of China, with the Mandarin Chinese teaching plan structured as follows:

- Basic communicative Chinese will be taught in the 1st year of study by the Department of Chinese, Faculty of Liberal Arts, Thammasat University, Rangsit Campus.

- Chinese language preparation for the Specific Professional Course Group (Traditional Chinese Medicine) will be taught in the 2nd year of study by Chengdu University of Traditional Chinese Medicine, People's Republic of China.

- All students must pass the Chinese Proficiency Test (HSK) at no less than Level 4 before entering the Specific Professional Course Group (Traditional Chinese Medicine) in the 3rd year of study.

- All students must pass the Chinese Proficiency Test (HSK) at no less than Level 5 before entering the Clinical Clerkship in the 6th year of study.

3. Study Plan

Academic Year 1 (Study in Thailand)	
Semester 1	Credits
CMM 120 Engagement in Health Science	3
CMM 122 Innovation and Communication in Healthcare Sectors	3
CMM 123 Self-reflection and Personal Development for Healthcare Professionals	3
EL 105 English Communication Skills	3
CMM 110 Medical Biology	3
CMM 111 Medical Biology Laboratory	1
CMN 111 Chemistry and organic chemistry for medical sciences	3
CMN 112 Chemistry and organic chemistry laboratory for medical sciences	1
CMN 141 Fundamentals of Chinese	2
total	22
Semester 2	Credits
LAS 101 Critical Thinking, Reading, and Writing	3
EL 296 Academic English for Science Disciplines 1	3
CMM 121 Applied Medical Sciences and Sustainability	3
CMM 124 Entrepreneurial Competencies Development in Healthcare Professionals	3
CMM 217 Fundamentals of Biomedical Sciences 1	4
CMM 218 Fundamentals of Biomedical Sciences 2	3
CMN 142 Thai – Chinese Culture	1
total	20

Academic Year 2 (Study in the People's Republic of China)	
Semester 1	Credits
CMN 241 Comprehensive Chinese 1	6
CMN 243 Reading and writing in Chinese 1	6
CMN 245 Intensive Training in Chinese 1	4
CMN 251 Traditional Physical Education 1	2
CMN 247 Introduction to Chinese Culture	4
total	22
Semester 2	Credits
CMN 242 Comprehensive Chinese 2	6
CMN 244 Reading and writing in Chinese 2	6
CMN 246 Intensive Training in Chinese 2	4
CMN 252 Traditional Physical Education 2	2
CMN 253 Introduction to Traditional Chinese Medicine	1
total	19

Note: Teaching and learning are conducted at Chengdu University of Traditional Chinese Medicine (Partner University).

Academic Year 3 (Study in Thailand)	
Semester 1	Credits
CMM 126 Information Technology Law for Healthcare Professionals	3
CMN 341 TCM Terminology 1	2
CMM 222 Patient assessment and Symptomatology	2
CMN 021 Fundamental Skin and Musculoskeletal System	3
CMN 022 Professional Law and Thai Public Health System	1
CMN 351 Fundamentals of Traditional Chinese Medicine 1	3
CMN 352 Fundamentals of Traditional Chinese Medicine 2	3
CMN 353 Ancient Medical Chinese	4
total	21
Semester 2	Credits
CMM 125 Biostatistics and Epidemiology for Medical Science	3
CMN 023 Fundamental Cardiovascular System	2
CMN 024 Fundamental Respiratory System	2
CMN 025 Medical Psychology	1
CMN 354 TCM Diagnosis 1	3
CMN 355 TCM Diagnosis 2	3
CMN 356 Chinese Materia Medica 1	4
CMN 357 Chinese Materia Medica 2	3
total	21

Academic Year 4 (Study in Thailand)	
Semester 1	Credits
CMN 411 Research Ethics and Methodology	2
CMN 441 TCM Terminology 2	2
CMN 026 Fundamental Genitourinary System	2
CMN 027 Fundamental Endocrine System	2
CMN 028 Fundamental Nervous System, Brain and Behavior	3
CMN 451 TCM Formulas 1	3
CMN 452 TCM Formulas 2	3
CMN 453 Selective Reading of Neijing	3
total	20
Semester 2	Credits
CMN 029 Fundamental Alimentary System and Nutrition	2
CMN 030 Fundamental Hematology and Lymphoreticular System	2
CMN 031 Fundamental Infection and Immunology	3
CMN 454 Introduction to Acupuncture and Moxibustion and Massage	1
CMN 455 Acupuncture and Moxibustion 1	5
CMN 456 Various TCM Theories	2
Free Elective Course	2
Free Elective Course	2
total	19

Academic Year 5 (Study in the People's Republic of China)	
Semester 1	Credits
CMN 551 Treatise on Cold Pathogenic Diseases	3
CMN 552 Synopsis of the Golden Chamber	3
CMN 553 TCM Internal Medicine	8
CMN 554 TCM Ophthalmology	2
CMN 555 Tuina	4
Free Elective Course	2
total	22
Semester 2	Credits
CMN 556 Science of Epidemic Febrile Disease of TCM	2
CMN 557 Acupuncture and Moxibustion 2	4
CMN 558 Acupuncture and Moxibustion 3	5
CMN 559 TCM Orthopedics	3
CMN 560 TCM Obstetrics and Gynecology	3
CMN 561 TCM Pediatrics	3
CMN 562 TCM ENT	2
CMN 563 TCM Surgery	4
CMN 564 TCM and Holistic Health Care	2
total	28

Note: Teaching and learning are conducted at Chengdu University of Traditional Chinese Medicine (Partner University).

Academic Year 6 (Study in the People's Republic of China)	
Semester 1	Credits
CMN 671 Clinical Clerkship 1	15
total	15
Semester 2	Credits
CMN 672 Clinical Clerkship 2	15
total	15

- Note:**
1. Teaching and learning are conducted at Chengdu University of Traditional Chinese Medicine (Partner University).
 2. Comprehensive Examination will be taken when all courses are completed according to the prescribed study plan.

4. Course List

1) General Education Courses 30 Credits

Students must study all courses in each of the 5 categories: 1) Global Mindset and Social Awareness, 2) Aesthetics and Communication Skills, 3) Mathematics, Science, and Technology, 4) Well-being and Future Skills, and 5) Social Service and Action-based Learning, for a total of 30 Credits as follows:

Course Code	Course Title	Credits
(Lecture-Practice-Self Study)		

1.1 Global Mindset and Social Awareness Category

CMM	124	Entrepreneurial Competencies Development in Healthcare Professionals	3 (3-0-6)
CMM	126	Information Technology Law for Healthcare Professionals	3 (3-0-6)

1.2 Aesthetics and Communication Skills Category

CMM	123	Self-reflection and Personal Development for Healthcare Professionals	3 (3-0-6)
LAS	101	Critical Thinking, Reading, and Writing	3 (3-0-6)
EL	105	English Communication Skills	3 (3-0-6)

1.3 Mathematics, Science, and Technology Category

CMM	125	Biostatistics and Epidemiology for Medical Science	3 (3-0-6)
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1.4 Well-being and Future Skills Category

CMM	121	Applied Medical Sciences and Sustainability	3 (3-0-6)
CMM	122	Innovation and Communication in Healthcare Sectors	3 (3-0-6)
EL	296	Academic English for Science Disciplines 1	3 (3-0-6)

1.5 Social Service and Action-based Learning Category

CMM	120	Engagement in Health Science	3 (3-0-6)
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2) Specialized Courses 208 Credits

2.1 Foundational Course Group (Medical Science) 42 Credits

- Foundational Science 10 Credits

CMM	110	Medical Biology	3 (3-0-6)
CMM	111	Medical Biology Laboratory	1 (0-2-1)

CMN	111	Chemistry and organic chemistry for medical sciences	3 (3-0-6)
CMN	112	Chemistry and organic chemistry laboratory for medical sciences	1 (0-2-1)
CMN	411	Research Ethics and Methodology	2 (2-0-4)
- Foundational Medical Science			32 Credits
CMM	217	Fundamentals of Biomedical Sciences 1	4 (3-2-7)
CMM	218	Fundamentals of Biomedical Sciences 2	3 (2-2-5)
CMM	222	Patient assessment and Symptomatology	2 (2-0-4)
CMN	021	Fundamental Skin and Musculoskeletal system	3 (2-2-5)
CMN	022	Professional Law and Thai Public Health System	1 (1-0-2)
CMN	023	Fundamental Cardiovascular System	2 (1-2-3)
CMN	024	Fundamental Respiratory System	2 (1-2-3)
CMN	025	Medical Psychology	1 (1-0-2)
CMN	026	Fundamental Genitourinary System	2 (1-2-3)
CMN	027	Fundamental Endocrine System	2 (1-2-3)
CMN	028	Fundamental Nervous System, Brain and Behavior	3 (2-2-5)
CMN	029	Fundamental Alimentary System and Nutrition	2 (1-2-3)
CMN	030	Fundamental Hematology and Lymphoreticular System	2 (1-2-3)
CMN	031	Fundamental Infection and Immunology	3 (2-2-5)

2.2 Language for Traditional Chinese Medicine Course Group **43 Credits**

CMN	141	Fundamentals of Chinese	2 (2-0-4)
CMN	142	Thai – Chinese Culture	1 (1-0-2)
CMN	241	Comprehensive Chinese 1	6 (6-0-12)
CMN	242	Comprehensive Chinese 2	6 (6-0-12)
CMN	243	Reading and writing in Chinese 1	6 (6-0-12)
CMN	244	Reading and writing in Chinese 2	6 (6-0-12)
CMN	245	Intensive Training in Chinese 1	4 (4-0-8)
CMN	246	Intensive Training in Chinese 2	4 (4-0-8)
CMN	247	Introduction to Chinese Culture	4 (4-0-8)
CMN	341	TCM Terminology 1	2 (2-0-4)
CMN	441	TCM Terminology 2	2 (2-0-4)

2.3 Specific Professional Course Group (TCM)**93 Credits**

CMN	251	Traditional Physical Education 1	2 (0-4-2)
CMN	252	Traditional Physical Education 2	2 (0-4-2)
CMN	253	Introduction to Traditional Chinese Medicine	1 (1-0-2)
CMN	351	Fundamentals of Traditional Chinese Medicine 1	3 (3-0-6)
CMN	352	Fundamentals of Traditional Chinese Medicine 2	3 (3-0-6)
CMN	353	Ancient Medical Chinese	4 (4-0-8)
CMN	354	TCM Diagnosis 1	3 (2-2-5)
CMN	355	TCM Diagnosis 2	3 (2-2-5)
CMN	356	Chinese Materia Medica 1	4 (4-0-8)
CMN	357	Chinese Materia Medica 2	3 (3-0-6)
CMN	451	TCM Formulas 1	3 (3-0-6)
CMN	452	TCM Formulas 2	3 (3-0-6)
CMN	453	Selective Reading of Neijing	3 (3-0-6)
CMN	454	Introduction to Acupuncture and Moxibustion and Massage	1 (1-0-2)
CMN	455	Acupuncture and Moxibustion 1	5 (5-0-10)
CMN	456	Various TCM theories	2 (2-0-4)
CMN	551	Treatise on Cold Pathogenic Diseases	3 (3-0-6)
CMN	552	Synopsis of the Golden Chamber	3 (3-0-6)
CMN	553	TCM Internal Medicine	8 (7-2-15)
CMN	554	TCM Ophthalmology	2 (1-2-3)
CMN	555	Tuina	4 (2-4-6)
CMN	556	Science of Epidemic Febrile Disease of TCM	2 (2-0-4)
CMN	557	Acupuncture and Moxibustion 2	4 (2-4-6)
CMN	558	Acupuncture and Moxibustion 3	5 (4-2-9)
CMN	559	TCM Orthopedics	3 (2-2-5)
CMN	560	TCM Obstetrics and Gynecology	3 (2-2-5)
CMN	561	TCM Pediatrics	3 (1-4-4)
CMN	562	TCM ENT	2 (1-2-3)
CMN	563	TCM Surgery	4 (3-2-7)
CMN	564	TCM and Holistic Health Care	2 (2-0-4)

2.4 Clinical Clerkship Group

30 Credits

CMN	671	Clinical Clerkship 1	15 (0-45-0)
CMN	672	Clinical Clerkship 2	15 (0-45-0)

3) Free Elective Courses

6 Credits

Students must choose to study 3 courses out of the following 5 courses:

CMO	481	Emergency detection and prehospital management 2	(2-0-4)
CMN	481	Applied Psychology in Clinical Health Care	2 (2-0-4)
CMN	482	Exercise Physiology	2 (1-2-3)
CMN	581	Training of TCM Thinking	2 (2-0-4)
CMN	582	Training of TCM Diagnostic Skills	2 (2-0-4)

5. Course Descriptions

1) General Education Courses

Global Mindset and Social Awareness Category

CMM 124 Entrepreneurial Competencies Development in Healthcare Professionals 3 (3-0-6)

Entrepreneurship in general, how to become entrepreneur, Ethics of the entrepreneurship, Identifying and exploiting opportunities, Decision making, Strategic thinking, Taking and managing risk, Different types of companies and organizations in the healthcare sector, Establishment of the company (business idea and plan) and the running of a company, Marketing, Production and work quality, Legislation, Customer orientation, financial management, Networking, Knowledgeable of Legal Regulations.

CMM 126 Information Technology Law for Healthcare Professionals 3 (3-0-6)

Study the basic principles of the rule of law and the fundamentals of private and public law for healthcare professionals. Legal issues in areas such as digital data, the PDPA (Personal Data Protection Act), Intellectual Property, the Social Security Fund, the Workmen's Compensation Fund, and the National Health Act focus on legal discussions that are important in today's medical practice that is applied in real life

Aesthetics and Communication Skills Category

CMM 123 Self-reflection and Personal Development for Healthcare Professionals 3 (3-0-6)

Managing and adaptation to university life. Understanding self-awareness and respect others people. Development of soft skill, social skill, mindset of life and emotional intelligence leading to future planning in all dimensions as well as developing lifelong learning to coexist peacefully with others. Learning to live harmoniously and respectfully with others and the society.

LAS 101 Critical Thinking, Reading, and Writing

3 (3-0-6)

Development of critical thinking through questioning, analytical, synthetic and evaluation skills. Students learn how to read without necessarily accepting all the information presented in the text, but rather consider the content in depth, considering the objectives, perspectives, assumptions, bias and supporting evidence, as well as logic or strategies leading to the author's conclusion. The purpose is to apply these methods to students' own persuasive writing based on information researched from various sources, using effective presentation techniques.

EL 105 English Communication Skills

3 (3-0-6)

Development of English communication skills, including listening, speaking, reading and writing. Practice of language, vocabulary and expressions used in academic and social contexts.

Mathematics, Science, and Technology Category

CMM 125 Biostatistics and Epidemiology for Medical Science

3 (3-0-6)

Principles and concepts of biostatistics and epidemiology for biomedical science; Study design in biomedical research; Occurrence relation of disease/illness and its determinants; Measure of disease frequency and measure of effect; Review the concepts of descriptive statistics and inferential statistics especially estimation and hypothesis testing; Critical appraisal of the medical literature.

Well-being and Future Skills Category

CMM 121 Applied Medical Sciences and Sustainability

3 (3-0-6)

The study of human and living life with sustainable well-being in context of natural and built environment. Economy of well-being, social determinants of health. Contemporary society and culture in life and health aspects. Human health and confronting with global change in various perspectives.

CMM 122 Innovation and Communication in Healthcare Sectors 3 (3-0-6)

Psychology of Art and Creativity, Creative Thinking, Techniques and Tools for Success, Creative Problem Solving, Design Thinking and Creativity for Innovation, Types of innovation, Innovation Toolbox, reviewing patents/ intellectual property, identifying an inventive opportunity, Competitive strategy projecting trends, as well as communication of these ideas that lead to suitable results in social and healthcare sector.

EL 296 Academic English for Science Disciplines 1 3 (3-0-6)

Development of English listening, speaking, reading, and writing skills for scientific academic purposes, Practice of summarizing, giving definitions, describing processes, giving instructions, explaining cause and effect relationships, and describing compare and contrast relationships.

Social Service and Action-based Learning Category

CMM 120 Engagement in Health Science 3 (3-0-6)

Democracy, characteristics of civic citizen including respecting the rules, respecting others' rights, respecting differences, respecting equality, self-dependence, social responsibility, and thinking ability, civic engagement, environmental issues, problems in country and world, Sustainable Development Goals (SDGs), first aid course, community visiting, project creation and implementation related to health science.

2) Specialized Courses

2.1 Foundational Course Group (Medical Science)

- Foundational Science

CMM 110 Medical Biology 3 (3-0-6)

Cells and organelles, cell cycle and cell division, the biomolecules and metabolism, basic genetics, patterns of inheritance, the diversity of microorganisms and parasites, tissue levels and human bones, nervous system, human nutrition and digestive system, endocrine system, circulation and gas exchange, reproduction and development, body's defenses against disease.

CMM 111 Medical Biology Laboratory**1 (0-2-1)**

Prerequisite : Have taken CMM 110 or taking CMM 110 in the same semester

Experiments related to contents to CMM 110

Laboratory on the use of light microscope, prokaryotic and eukaryotic cells, plant and animal cells, mitosis and meiosis, carbohydrate tests, DNA extraction and analysis, the diversity of microorganisms, surface anatomy and human bone, reflex functions and somatic sensation, blood circulation and gas exchange through the heart to the lungs, antigen-antibody interaction.

CMN 111 Chemistry and organic chemistry for medical sciences**3(3-0-6)**

Protons, neutrons and electrons; Covalent bonding; Non-covalent bonding; Free electron pairs and chemical reactions; Elements; Solids, liquids, gases and solutions; Thermodynamics and kinetics; Acids and bases; Solubility and complexation; The chemistry of life; Functional groups and their properties; Biological molecules; Clinical chemistry; Electrons and photons; Spectroscopy. Molecular structure and properties of organic compounds, classification and nomenclature of various functional groups of organic molecules, stereochemistry, stereoisomers.

CMN 112 Chemistry and organic chemistry laboratory for medical sciences**1(0-2-1)**

Prerequisite : have taken or taking CMN 111 in the same semester

Experiments related to the contents in CMN 111

CMN 411 Research Ethics and Methodology**2 (2-0-4)**

Introduction to responsible research; relevant information for initiating research; critical reading and analysis; guidelines for good practices, ethics and regulations in bio-clinical sciences; responsible protocol writing; planning and setting up experiment/research; responsible peer review; good data management practice and quality standards; considerations for report and publication; ethical issues in publication; and presentation of research results.

- Foundational Medical Science

CMM 217 Fundamentals of Biomedical Sciences 1

4 (3-2-7)

Structures and functional processes of human body – from the molecular level to the cells, homeostasis of biomolecules and basic medical biochemistry, inheritance and mechanism of gene action, human genome and mutation, homeostasis and physiology of cells, internal and external cell interactions such as microbes, drugs and chemical reagents, cell growth and differentiation, cell senescence and apoptosis, differentiation of cell into tissue and organ, fundamental pathology and pathophysiology of cell and tissue.

CMM 218 Fundamentals of Biomedical Sciences 2

3 (2-2-5)

Pathogenic microorganisms, including bacteria, viruses, fungi and parasites, life cycle of paracytes, pathogenesis, mechanism of disease, clinical symptoms, diagnosis, communicable disease, epidemiology, prevention, disease control, method of collecting specimens for diagnosis, basic knowledge of immunity, defensive system through cell and secretion, pathological state caused by immune system disorders, immune reactions in the body to various conditions and defects in the immune system, application of immunological knowledge in the diagnosis of underlying pathology and pathophysiology of infection.

CMM 222 Patient assessment and Symptomatology

2 (2-0-4)

Systematic basic health assessment, clinical skills such as interviewing, history taking, physical examination, medical recording, specimen collection, laboratory and radiology investigation and result interpretation, signs and symptoms of common diseases, basic instruments commonly used in medical care, basic practice in operating room and patient unit, principle of counseling patient and relatives, assessment of patient problems, clinical analysis, reasoning and decision making, communication and ethical practice.

CMN 021 Fundamental Skin and Musculoskeletal System

3 (2-2-5)

Basic structure and important functions of the integument system (i.e. skin, hair and nails) and the musculoskeletal system (i.e. skeletal muscle, smooth muscle, bone, cartilage and joints), physiology of muscular and joint movement (i.e. controlling mechanism, energy consumption of muscles, and physiology of exercise), and biochemistry of musculoskeletal system. Common abnormal conditions and their pathological findings of both skin and

musculoskeletal systems, imaging and pharmacology and application for disease management using traditional Chinese Medicine.

CMN 022 Professional Law and Thai Public Health System **1 (1-0-2)**

laws governing TCM professions, medical ethics, ethical issues exemplary to the profession, ethical questions that prompts discussion from many angles and Thai public health system.

CMN 023 Fundamental Cardiovascular System **2 (1-2-3)**

Basic structure and function of important cardiovascular systems such as blood circulating, the controlling mechanisms, the biochemistry, and common diseases of the cardiovascular system, epidemiology, pathophysiology, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 024 Fundamental Respiratory System **2 (1-2-3)**

Basic structure and important function of respiratory systems such as respiring, and gas exchanging, the controlling mechanisms, the biochemistry, and common diseases of the respiratory systems, epidemiology, pathophysiology, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 025 Medical Psychology **1 (1-0-2)**

Basic Theory of Medical Psychology, factors Affecting Mental Health, the relationship between mental health and disease occurrence, healthcare and therapeutic psychology analysis.

CMN 026 Fundamental Genitourinary System **2 (1-2-3)**

genitourinary system such as controlling of water, acid-base balancing, urine production. Mechanism and controls of the phtharmolo process. Histology, physiology and molecular aspects of gametogenesis and fertilization. Physiological and biochemistry change during menstruation cycle. Common abnormal conditions of the urogenital system, pathology, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 027 Fundamental Endocrine System**2 (1-2-3)**

Basic structure and important functions of the endocrine system such as physiology and biochemistry of endocrine organs and their hormones; hormonal actions and metabolisms; controlling mechanisms of hormonal release; pathology, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 028 Fundamental Nervous System, Brain and Behavior**3 (2-2-5)**

Scopes of this subject included neuroanatomy of the nervous system (including brain, spinal cord, eyes, ear, and olfactory system), neurophysiology, and biochemistry of the nervous system (i.e. neurotransmitters). Neurological pathways such as sensory and motor pathways, spinothalamic tract, optical pathway, auditory pathway, and olfactory pathway as well as the autonomic and peripheral nervous systems are emphasized. Important neural structures/tracts and such as spinal cords, cranial nerves, brain, and sensory receptors as well as the cerebrospinal fluid system are also highlighted in this course. Physiology and pharmacology of the nervous system are also emphasized. This course further extends to the behavioral science, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 029 Fundamental Alimentary System and Nutrition**2 (1-2-3)**

Basic and important anatomy, physiology of organs of the digestive system which include alimentary tract (mouth and oral cavity, esophagus, stomach, small and large intestine, rectum and anus), liver, gall bladder, pancreas, functions of the alimentary system (i.e. digestion and absorption), functions of digestive enzymes and nutrition pharmacology and application for disease management using traditional Chinese Medicine.

CMN 030 Fundamental Hematology and Lymphoreticular System**2 (1-2-3)**

Basic and important structure, hematological cells (including erythrocytes, leukocytes, and thrombocytes), their physiological functions and factors influencing cellular synthesis, to the abnormal conditions in the hematological system. Important pathways including coagulation, platelets aggregation and thrombolysis, pathophysiology, pharmacology and application for disease management using traditional Chinese Medicine.

CMN 031 Fundamental Infection and Immunology**3 (2-2-5)**

This course includes structure, morphology, and functions of immune system including both in normal condition and in response to infections and inflammation; basic concepts in the immune response (humoral immune response and cellular immune response); immune responses to infectious agents; concepts of vaccination; concepts of laboratory investigations for immunological diseases. Another part of this course also includes basic principles of medical bacteriology, virology and mycology especially in morphology, risk of infection, pathogenesis and pathology of infections. It also emphasizes on the common infectious diseases caused by microbes in the following aspects: clinical features; laboratory diagnosis, pathophysiology, pharmacology and application for disease management using traditional Chinese Medicine.

2.2 Language for Traditional Chinese Medicine Course Group**CMN 141 Fundamentals of Chinese****2 (2-0-4)**

Four basic skills of Chinese including speaking, listening, writing, reading, Chinese pronunciation with Chinese phonological system or Pinyin, Chinese character systematically writing skills, 300 of daily-life words and expressions, basic conversation and Chinese grammar.

CMN 142 Thai – Chinese Culture**1 (1-0-2)**

Development of Thai culture, lifestyle and fundamental of Thai society; Philosophies and ethics of Confucius, Lao Zi and Mo Zi; Principles and faiths in divinities; Family relationship; Inheritance relationship; Knowledge of art, literature, painting, sculpture; Thailand's and China's World Cultural Heritages; and Chinese medicine in Thailand.

CMN 241 Comprehensive Chinese 1**6 (6-0-12)**

Learning Chinese language in order to improve linguistic ability which including listening, speaking, reading, and writing. Students will be able to understand meanings of vocabulary such as general basic knowledge relating to Chinese medicine.

CMN 242 Comprehensive Chinese 2**6 (6-0-12)**

The main content of Chinese medicine such as basic theories of Chinese medicine, diagnosis, Chinese pharmacology, acupuncture, health care, etc. Students will understand and

remember vocabularies relating to Chinese medicine in order to establish positive attitude in becoming Chinese medicine physicians in the future.

CMN 243 Reading and writing in Chinese 1

6 (6-0-12)

Learning how to reading articles, understanding vocabularies and Chinese sentences writing, Learning and Understanding structure of basic Chinese alphabets including characteristics of lines, order of lines, and alphabet construction. Students will also learn basic knowledge of origins of pronunciation and meaning of Chinese alphabets.

CMN 244 Reading and writing in Chinese 2

6 (6-0-12)

Developing reading skill and encouraging habit of reading. Students will practice reading Chinese medicine articles and able to understand relation between traditional culture of China. Students are able to understand unique characteristics in writing Chinese articles such as meaning of regular words and its importance in grammar. They can also separate differences of function of words and types of sentences between speaking and writing.

CMN 245 Intensive Training in Chinese 1

4 (4-0-8)

Practice listening and reading Pinyin, writing Chinese logograms, vocabulary, grammar, and writing Chinese sentences in order to build good knowledge base for future development of learning advance level Chinese language.

CMN 246 Intensive Training in Chinese 2

4 (4-0-8)

Expand knowledge and ability in Chinese language especially in reading, creating sentences, and communication in advanced contexts.

CMN 247 Introduction to Chinese Culture

4 (4-0-8)

Traditional Chinese medicine basics and theories. Students can relate main theories in Neijing with modern Chinese medicine theories as well as studying method for Chinese medicine, internal organs, essential techniques, meridian theories, basic physical theories, reasons and characteristics of diseases, function of diseases, disease conditions, disease prevention, and health promotion.

CMN 341 TCM Terminology 1**2 (2-0-4)**

Introduces approximately 200 Chinese Medicine terms and related fields commonly used.

CMN 441 TCM Terminology 2**2 (2-0-4)**

Further study of approximately 200 Chinese Medicine terms.

2.3 Specific Professional Course Group (Traditional Chinese Medicine)**CMN 251 Traditional Physical Education 1****2 (0-4-2)**

Understanding traditional Chinese physical education by learning and practicing basic movement of Tai Chi. Students will learn 16 Tai Chi moves by themselves which will teach them about respect in moral between teachers and students.

CMN 252 Traditional Physical Education 2**2 (0-4-2)**

Students will understand skills of basic Chinese martial arts by learning and practicing Baduanjin by themselves, which will teach them about respect in moral between teachers and students.

CMN 253 Introduction to Traditional Chinese Medicine**1 (1-0-2)**

The fundamental and characteristic of Chinese Medicine knowledge, including the subjects in course syllabus, learning process, objectives and Chinese Medicine related occupations, for planning the education program.

CMN 351 Fundamentals of Traditional Chinese Medicine 1**3 (3-0-6)**

Fundamental theory of Chinese Medicine: Yin-Yang theory, five phase theory, characteristic of Chinese Medicine knowledge, Internal organ manifestation includes the five zang-organs, the six fu-organs.

CMN 352 Fundamentals of Traditional Chinese Medicine 2**3 (3-0-6)**

Theoretical knowledge of the phenomena of life from the perspective of medicine: this includes qi, blood and fluids; meridian- channels (jing-luo), disease causation, progression, treatment, prevention and longevity.

CMN 353 Ancient Medical Chinese**4 (4-0-8)**

Improving skills of Chinese language and culture by readability and understanding of ancient medical Chinese scriptures. This will serve as excellent base knowledge for studying details in ancient medical Chinese scriptures including understanding of context of other ancient textbooks in the future.

CMN 354 TCM Diagnosis 1**3 (2-2-5)**

The principle of examination and diagnosis in Chinese Medicine (four examinations): observing, listening/smelling, asking and palpating.

CMN 355 TCM Diagnosis 2**3 (2-2-5)**

This is comprised of the theory, methodology and skills for diagnosing illness and differentiating patterns and symptoms: eight principles syndrome differentiation/pattern identification, six-meridian syndrome differentiation/ pattern identification, visceral syndrome differentiation/pattern identification, disease-caused syndrome differentiation/pattern identification, qi-blood syndrome differentiation/pattern identification.

CMN 356 Chinese Materia Medica 1**4 (4-0-8)**

General theory of Chinese herbal medicine: characteristics, properties, indications, preparations, contraindications and dosages of exterior-releasing medicinal, heat-clearing medicinal, purgative medicinal, wind-dampness-dispelling medicinal, dampness-draining diuretic medicinal, interior-warming medicinal, qi-regulating medicinal, digestant medicinal.

CMN 357 Chinese Materia Medica 2**3 (3-0-6)**

Worm-expelling medicinal, hemostatic medicinal, blood-activating medicinal, phlegm-dispelling medicinal, cough-suppressing and panting-calming medicinal, tranquillizing medicinal, liver-pacifying and wind-extinguishing medicinal, orifice-opening medicinal, tonifying and replenishing medicinal, astringent medicinal.

CMN 451 TCM Formulas 1**3 (3-0-6)**

General introduction of the source of formulas and a brief history of the development of their uses, formula categories, formula combinations, formula composition and modifications,

commonly-used forms of administration, formula decoction methods, factors that influence the efficacy of formulas.

Exterior-releasing formulas, purgative formulas, harmonizing and releasing formulas, heat-clearing formulas, summer-heat dispelling formulas, interior-warming formulas, exterior-interior-releasing formulas, tonifying and replenishing formulas.

CMN 452 TCM Formulas 2

3 (3-0-6)

Astringent formulas, tranquillizing formulas, orifice-opening formulas, qi-activating formulas, blood-activating formulas, wind-dispelling formulas, dryness-moistening formulas, dampness-dispelling formulas, phlegm-dispelling formulas, digestant formulas, worm-expelling formulas, emetic formulas.

CMN 453 Selective Reading of Neijing

3 (3-0-6)

Selective Reading of Neijing is the oldest medicine scripture in China. Students will learn and understand its basic theory and philosophy by studying main details from the reading and apply the knowledge in clinical level. They will also be able to analyze and think academically as Chinese medicine practitioners.

CMN 454 Introduction to Acupuncture and Moxibustion and Massage

1 (1-0-2)

The fundamentals of Acupuncture, Moxibustion and Massage for developing analytical abilities, theoretical knowledge, practice skills and clinical application.

CMN 455 Acupuncture and Moxibustion 1

5 (5-0-10)

The meridians and collaterals theory: the twelve main meridians, the eight extra meridians, cyclical flow of qi in the twelve main meridians, various acupuncture points and the therapeutic properties of the acupuncture points.

CMN 456 Various TCM Theories

2 (2-0-4)

The history and development of Chinese medicine knowledge. Discuss the theories of various schools (thoughts from famous Chinese medicine physicians) and clinical application.

CMN 551 Treatise on Cold Pathogenic Diseases**3 (3-0-6)**

The theory, procedure, medicine and herb formula recorded in the Treatise on Cold Pathogenic Diseases. Students will understand the basic principle and able to apply it on a clinical level as well as showing flexibility and critical thinking in identify and cure diseases, which will leads to curing of various diseases on a clinical level. In addition, students will be able to read and research advanced ancient treatise in order to build strong educational structure for future Chinese medicine study.

CMN 552 Synopsis of the Golden Chamber**3 (3-0-6)**

Synopsis of the Golden Chamber is one of the most important Chinese treatises. It contained and recorded valuable experience in curing diseases with supportive theories and explanation, which is mostly used as references in identifying and curing various diseases.

CMN 553 TCM Internal Medicine**8 (7-2-15)**

Diseases patterns of the spleen (ingestion, diarrhea, stomachache, constipation), diseases patterns of the liver (hypochondriac pain, jaundice), diseases patterns of the kidney (edema, spermatorrhea, erectile dysfunction), diseases patterns of the qi-blood-fluid (depression, hidrosis syndrome, diabetes mellitus, malignancy) diseases patterns of the physical body and meridians (low back pain, flaccidity syndrome, arthromyodynia) and clinical practice.

CMN 554 TCM Ophthalmology**2 (1-2-3)**

The anatomy and physiology in ophthalmology, etiology, pathogenesis, diagnosis and pattern differentiation, common diseases, treatment, prevention and wellness.

CMN 555 Tuina**4 (2-4-6)**

History of Tui Na massage, the mechanism of therapeutic effect, the principles and techniques, practice of basic massage techniques, techniques for each part of the body, Tui Na treatment for internal medicine, gynecology, pediatrics, orthopedics, phthalmology and otolaryngology and clinical practice.

CMN 556 Science of Epidemic Febrile Disease of TCM**2 (2-0-4)**

This theory studies in the origination, the development, the cure, and the prevention of heat-related diseases. It covers the basic theories and how to apply them on a clinical level, which will improve the ability in critical thinking for the students.

CMN 557 Acupuncture and Moxibustion 2**4 (2-4-6)**

Basic theory of acupuncture and moxibustion, types of needles, acupuncture points. Acupuncture techniques: filiform needle therapy, needling methods, the management of possible accidents in acupuncture treatment, modern methods and techniques of acupuncture.

CMN 558 Acupuncture and Moxibustion 3**5 (4-2-9)**

Integrated knowledge in Chinese medicine diagnosis, the meridians and collaterals theory, the acupuncture points and theory of acupuncture and moxibustion are applied for treatment of various diseases and symptoms.

CMN 559 TCM Orthopedics**3 (2-2-5)**

The history of injury, mechanism of injury, diagnosis and pattern differentiation, treatment of the fracture or dislocation of bones and soft tissue injuries, clinical practice demonstration in orthopedics and traumatology.

CMN 560 TCM Obstetrics and Gynecology**3 (2-2-5)**

The introduction will include a brief historical overview, the understanding of female anatomy and physiology in Chinese medicine, causes and patho-dynamics of gynecological diseases, essential of diagnosis and pattern differentiation, essential of treatment methods, prevention and wellness. The specific topics include: menstrual disorders, leukorrheal diseases, conditions of pregnancy, postpartum disorders, breast disorders, phthalo disorders.

CMN 561 TCM Pediatrics**3 (1-4-4)**

Chinese medicine pediatrics is based on the fundamental theory of Chinese medicine and uses modalities such as herbal medicine, acupuncture and moxa, tuina massage and others. It is concerned with fertilization, parturition, growth, development, physiology and pathology,

as well as nutrition, wellness and the treatment and prevention of illness in human from fetal development through adolescence.

CMN 562 TCM ENT

2 (1-2-3)

The anatomy and physiology in otorhinolaryngology, etiology, pathogenesis, diagnosis and pattern differentiation, common diseases, treatment, prevention and wellness. Including inner-connection between ear-nose-throat and internal organs and meridians.

CMN 563 TCM Surgery

4 (3-2-7)

Chinese medicine theory, diagnosis, treatment of common external medicine diseases and clinical practice.

CMN 564 TCM and Holistic Health Care

2 (2-0-4)

The principles of Chinese medicine wellness practice and disease prevention. Be able to understand the characteristic of the theories, health maintenance and ultimately apply them for practical uses.

2.4 Clinical Clerkship Group

CMN 671 Clinical Clerkship 1

15 (0-45-0)

Diagnosis and treatment for patients using principle of Chinese Medicine under supervision of instructors.

CMN 672 Clinical Clerkship 2

15 (0-45-0)

Diagnosis and treatment for patients using principle of Chinese Medicine under supervision of instructors.

3) Free Elective Courses

CMO 481 Emergency detection and prehospital management

2 (2-0-4)

Early detection and initial prehospital management for commonly encountered medical emergencies. Medical emergencies including: BLS and ACLS for sudden cardiac arrest patients, Cardiovascular emergencies: shock, chest pain, syncope, Severe hypertension, Respiratory emergencies: Dyspnea: pulmonary edema, anaphylaxis, asthma, hyperventilation, airway

obstruction. Neurological emergencies: seizure disorders, Acute stroke, severe headache, Diabetic emergencies, Ocular emergencies, Assessment and management of these emergency situation, Safety referral-transfer patients. Assessment and management of these emergency situation, referral-transfer patients and CPR.

CMN 481 Applied Psychology in Clinical Health Care

2 (2-0-4)

Examines how psychological, social, and behavioral factors interact with and affect people in maintaining their health, personality development behavioural change, coping with stress, loss and pain, obtaining medical treatment and recovering from serious illness, communication in health care practice, principle and practice of counseling.

CMN 482 Exercise Physiology

2 (1-2-3)

Physiologic changes of body in response to different kind of exercises at levels of: molecule, cell, tissue and organ; effects of short- and long-term exercises on various body functions, including physical fitness promotion.

CMN 581 Training of TCM Thinking

2 (2-0-4)

Understanding the origin of Chinese medicine and its relation to ancient Chinese philosophy. Learning how to conduct research in Chinese medicine, explain characteristics of matters, perceive changes in the universe, and analyze various ideas around us. Apply the aforementioned knowledge to Chinese medicine in term of internal organs, reasoning theory, function of diseases, and analyze condition of diseases in order to identify abnormally of a body correctly and appropriately planning for healing.

CMN 582 Training of TCM Diagnostic Skills

2 (2-0-4)

The correct basic diagnose procedures and able to explain the danger of incorrect diagnose procedures such as anamnesis and examination in eye sight, tongue listening, smelling, and pushing. Students will learn how to correctly perform these actions and able to apply the skills in the real treatment.