

Doctor of Medicine Program  
(English Program)

(New Program for 2013)

Faculty of Medicine,  
Thammasat University

(Approved by Thammasat University Council at meeting #10 of 2012 on October 29, 2012)

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**Program Specifics**  
**Doctor of Medicine Program (English Program)**  
**New Program 2013**

Name of institute:                   Thammasat University  
Campus/Faculty/Department: Rangsit Campus/ Faculty of Medicine

**Section 1. General Information**

**1. Title of Program**

Doctor of Medicine Program (English Program)

**2. Title of Degree and Major Field**

Full title:                    Doctor of Medicine

Abbreviated title:        M.D.

**3. Major Field (If Any)**

None

**4. Total Credits**

The number of credits throughout the program: 258

**5. Type of Program**

**5.1 Level**

Six-year Bachelor's Degree Program

**5.2 Medium of Instruction**

English

**5.3 Admission**

Thai students only

**5.4 Collaboration with Other Institutes**

The program is exclusive to this institute.

**5.5 Type of Conferred Degree**

One degree (one major)

**6. Program Status and Endorsement/Approval**

New program 2013

Implementation schedule: Semester 1, year 2013

Considered by the University Board at meeting # 15 of 2012, on the ... 8th ... day of the month of ...October, in the year 2012.....

Considered by the University Council Sub-Committee on Programs and Education Provision at meeting ...#6 of 2012 on the ... 18<sup>th</sup> day of the month of ...October, in the year ... 2012.....

Approved/agreed by the University Council at meeting ...#10 of 2012 on the 29<sup>th</sup> day of the month of ...October, in the year ...2012...

#### **7. Preparedness to Provide Quality Program That Meets Standards**

The program is prepared to provide the quality education that meets the Thai Qualifications Framework for Higher Education for the academic year 2016.

#### **8. Professions/Careers after Graduation**

- 8.1 Physicians at public and private infirmaries
- 8.2 Instructors at public and private faculties of medicine or of health-related science
- 8.3 Postgraduate study at diplomate level toward becoming specialist physicians
- 8.4 Candidates for Master's and Doctoral degrees in related fields
- 8.5 Researchers

9. Names, Identification Numbers, Academic Ranks and Qualifications of Faculty Members Responsible for the Program

Number	Identification Number	Academic Rank	Name – Surname	Academic Qualifications/Institutes/Years of Graduation
1	3100503150xxx	Associate Professor	Anucha Apisarnthanarak	<ul style="list-style-type: none"> <li>- Diplomate of the Thai Board of Infectious Medicine, Medical Council, 2003</li> <li>- Diplomate of the Thai Board of Medicine, Medical Council, 2003</li> <li>- Diplomate of the Thai Board of Family Medicine, Medical Council, 2003</li> <li>- Certificate in Infectious Disease, Washington University School of Medicine USA, 2002</li> <li>- Diplomate American Board Of Internal Medicine, USA, 2000</li> <li>- Doctor of Medicine, Faculty of Medicine Ramathibodi Hospital, Mahidol University, 1995</li> </ul>
2	3120100486xxx	Associate Professor	Prakitpunthu Tomtitchong	<ul style="list-style-type: none"> <li>- Ph.D. Molecular Biology University of Leeds, UK, 2008</li> <li>- MSc. Surgical Science University of Leeds, UK, 2002</li> <li>- Diplomate of the Thai Board of Surgery, Medical Council (Chiang Mai University), 1994</li> <li>- Diploma in Surgery, Chiang Mai University, 1994</li> <li>- Doctor of Medicine, Chiang Mai University, 1991</li> </ul>

3	3510600024xxx	Assistant Professor	Peerapong Kitipawong	<ul style="list-style-type: none"><li>- Diplomat of the Thai Board of Family Medicine, Medical Council, 2003</li><li>- Certificate Cardiology University of Newcastle upon Tyne, 1995</li><li>- Doctor of Medicine, Lyceum Northwestern, FQD-MF, 1987</li><li>- Bachelor of Science (Pharmacy), Chiang Mai University, 1982</li></ul>
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## **10. Instructional Venues**

1) Learning and teaching in the first- to third-year levels: the Faculty of Medicine and Thammasat University (Rangsit Campus)

2) Clinical-level learning and practice in the fourth- to sixth-year levels: Thammasat University Hospital

In addition, public and private hospitals or service facilities, both domestic and in other countries, may be used for clinical and family medicine practices.

## **11. External Contexts or Development Affecting Program Planning**

### **11.1 Economic Context or Development**

Thailand's economic situation in the year 2012 is still highly unstable because of economic problems in all regions worldwide and natural changes that have resulted in widespread disasters and inhibited economic growth. The recession in global economic status and Thailand's reduced competitiveness tend to diminish the role of investment in driving the economy. Thailand's economic system currently is weak as regards supporting factors for science and technology. The infrastructure's service quality, the law, regulations and the economic order are neither favorable to the fair competitive system nor suitable for the changing economic situation.

In the year 2015, the Association of South East Asian Nations (ASEAN) will fuse into the ASEAN economic community (AEC), of which an important objective is the free transfer of goods, services, investments and labor as well as education and public health services among the member states. Thailand, which is a member state, would change in many aspects because of this regional fusion. Its economy, medical and public health services, education, as well as medical education, need to be improved in order to keep pace with this changing situation.

### **11.2 Social and Cultural Context or Development**

Thailand has moved into a geriatric society because of the expanding elderly population structure. Children and labor-age citizens have decreased in proportion. Thais of all ages have enhanced potential, but problems remain as regards the quality of education, children's intellectual levels, health-risk behaviors and low labor-related productivity. The population has received increased social protection with several forms of social benefits. However, not all of the disadvantaged can access all social services. The population's income differences and the opportunity to access resources are among the country's developmental problems. Thai society is

encountering a crisis in terms of declining virtues and ethics. There are various cultural changes, including increased narcotics popularity and gambling, especially among children and youngsters. Thais, however, are politically alert and prioritizing the good governance of the Nation and their own social responsibilities.

The country is facing declining values, and their primitive traditions are being compromised because of changes under the globalization current. Consequently, Thai society has moved into materialism and is increasingly ignoring good morals and culture in their daily lifestyles and relationships among people. The emphasis has been placed on the earning of incomes to satisfy consumption needs, while mutualism and courtesy have been regarded as less important. People are taking advantage of others, are without harmony and lack respect for others' rights and public interests.

The revised National Scheme of Education (2009 - 2016) contains the philosophy and the conceptual framework that cling to the philosophy of a sufficiency economy; that is, the adherence to the middle way and sufficiency with major components of moderation, reasonableness and self-immunity. This philosophy will lead to the progress of economy, society, environment and culture in a balanced, stable and sustainable way with the intention that humans will develop in their knowledge and personal integrity. Humans will, in turn, develop Thai society to become strong and balanced in three aspects, namely a quality society, an intellectual and learning society and a cohesive and caring society.

The ASEAN economic community, which will be in operation as of the year 2015, is one of the three pillars of ASEAN security, namely the economic, political and socio-cultural pillars. At the regional level, more than 600 million people from 10 member states and other ASEAN-collaborating countries will be closer to each other and able to move their jobs or residences more easily and extensively. The plural society with a multicultural diversity and mutual learning will inevitably occur in the near future with English as the official language for communication.

From the advancement of medical and other bodies of knowledge in the era of world without borders and of greatly expanding and advanced information technology, a number of factors have urged Thailand to plan for serious human-resource development. These include collaboration in the ASEAN community, the usage of English in communicating in the culture-diverse community, the differences in educational and health systems, the quality and excellence of culture, the improvements in a higher education qualification framework and of medical profession's standards

criteria (so that they are right and in line with the country development and with the world in the year 2012) and progress into universal education to augment the security of Thailand and the ASEAN community.

## **12. Impacts of Items 11.1 and 11.2 on Program Development and Relevance of Thammasat University Mission**

### **12.1 Impacts on Program Development**

The economic, social, cultural and medical professional situations in Thailand and at regional and global levels, the stakeholders' expectations, the estimation of need for capable and knowledgeable physicians to respond to the ASEAN region and, in particular, joining the ASEAN community have necessitated development of the Doctor of Medicine English Program in order to respond to and keep pace with the changes. The program has the following key characteristics:

12.1.1 Mainly uses English in the learning and teaching process

12.1.2 Defines desired characteristics of medical graduates

12.1.3 Emphasizes making medical graduates lifelong learners with virtue and ethics

12.1.4 Integrates bodies of knowledge

12.1.5 Is holistic, focusing on patient-centered management and development

12.1.6 Emphasizes strengthening health as a basis for developing into complete human beings

12.1.7 Its graduates will be able to exercise critical thinking and empirical evidence in their professional career.

12.1.8 Its graduates will have knowledge, competency and teamwork skills.

12.1.9 Its graduates will be able to adjust in contexts of change, as well as social, racial and cultural diversities.

### **12.2 Relevance to Thammasat University Mission**

The production of medical graduates who possess both knowledge and virtue and who efficiently communicate in English for the healthcare of people in all communities forms a basis for developing physically, mentally, intellectually and morally complete human beings that lead to the development of a balanced, secured and strong country and community. Achievement of this goal is considered one of the primary missions of the Faculty of Medicine and corresponds to the mission-of-education provision of Thammasat University.

**13. Relationships (If Any) with Other Programs Offered by Other Universities/Faculties/Departments (Such as Courses Offered by or to Other Colleges/Faculties/Departments)**

**13.1 Courses Offered by Other Programs**

Thirty-four credits of general education courses and six credits of compulsory science foundation courses in phase 1 of the Program are offered by the Faculty of Science of Technology and other faculties at Thammasat University. These credits and courses are as follows.

<b>Part I: General education courses</b>	21	credits
<b>Humanities</b>	Compulsory: 1 course, 2 credits	
TU 110 Integrated Humanities	2	(2-0-4)
<b>Social Sciences</b>	Compulsory: 2 courses, 5 credits	
TU 100 Civic Education	3	(3-0-6)
TU 120 Integrated Social Sciences	2	(2-0-4)
<b>Science and Mathematics</b>	Compulsory: 2 courses	
TU 130 Integrated Sciences and Technology	2	(2-0-4)
TU 155 Elementary Statistics	3	(3-0-6)
<b>Language</b>		
TH 161 Thai Usage	3	(3-0-6)
or TH 160 Basic Thai	3	(3-0-6)
EL 070 English Course 1	0	(3-0-6) non-credit course
EL 171 English Course 2	3	(3-0-6)
EL 172 English Course 3	3	(3-0-6)

**Part II:** Students are required to complete 12 credits in the following courses according to the course-related conditions pre-determined by the Faculty.

SC 142 Mathematics for Science	3	(3-0-6)
SC 136 Physics	3	(3-0-6)
EL 217 Speaking and Listening for Academic Purposes	3	(3-0-6)
EL 317 Reading and Writing for Academic Purposes	3	(3-0-6)

<b>Part III: Science Foundation Courses (Compulsory)</b>	6	credits
SC 114 Biology	3	(3-0-6)
SC 124 Fundamental Chemistry for Medicine	2	(2-0-4)
SC 174 Fundamental Chemistry for Medical Laboratory	1	(0-3-0)

### 13.2 Courses Offered to Other Colleges/Faculties/Departments/Programs

None

### 13.3 Management

The Doctor of Medicine Program (English Program) Board is responsible for the administration, management, government and evaluation of the education provision and the learning and teaching resource management. This responsibility thus ensures compliance with the program's objectives by coordinating with departments, divisions, course sub-committees, course coordinators, faculty members and support staff.

As regards the evaluation of learning and the verification of learning standards, an evaluating committee will be responsible for supervising the process and giving grades through coordination with departments and course sub-committees.

## Section 2. Program-Specific Information

### 1. Philosophy, Significance and Objectives of Program

#### 1.1 Philosophy

Physicians should possess the following attributes: knowledge, competencies and skills in complying with universal standards, appropriate attitudes, ability to practice in the country's health and public health systems, ability to continue education to become specialists, quality of being humanistic, virtue, ability to communicate efficiently in both Thai and English, ability to work with others in an efficient manner through awareness of diverse social and cultural factors and development of potential to update themselves continually to all aspects of change.

#### 1.2 Significance

Thailand co-founded the Association of South East Asian Nations or ASEAN, of which one important objective is to establish the ASEAN economic community for the free transfer of goods, services, investments and labor, as well as education and public health services among member states by the year 2015. Medical education in Thailand, therefore, needs appropriate improvements to support this changing situation. The demand for physicians will inevitably increase when several countries fuse into the ASEAN community and have English as the official language of the community. The health and public health systems must be changed to support the plural society with a large number of populations and cultural diversities, along with medical graduates who characteristically comply with this program's philosophy and objectives and possess the ability to communicate efficiently in English. Only in this way will demands be satisfied and the health problems of Thailand and the ASEAN community be solved.

#### 1.3 Objectives of Program

The Faculty of Medicine, Thammasat University, has composed this Doctor of Medicine English Program with the objective of producing graduates who possess the following nine desired characteristics.

1. Professional knowledge and skills pursuant to the Medical Professionals Competencies Criterion
2. Virtue, ethics and good attitudes toward the profession and society, with awareness of the law and medical profession-related activity
3. Capability of critical thinking, clinical reasoning and evidence-based medicine

4. Adherence to the holistic approach, while considering physical, mental, social and spiritual factors and covering individuals, families and communities

5. English communication and interpersonal skills for patients, their families, colleagues as well as ability to share appropriately the knowledge related to medicine and public health

6. Pursuit of self-directed learning and professional development, and information-technology literacy

7. Quality of community- and multicultural-minded doctors

8. A value placed upon good human relations and team work, and a show of leadership

9. A social quality of life

**2. Program Improvement and Modification Plan (Three-Year Plan)**

Improvement/Modification Plan	Strategies	Evidence/Indicators
<p>1. Improve course content so that content is up-to-date and complies with the Medical Professionals Competencies Criterion and the Medical Competency Assessment Criteria for the National License 2012</p>	<p>1. Design course descriptions and field experiences (Forms TQF 3-4) by comparing against the Medical Professionals Competencies Criterion, Medical Competency Assessment Criteria for the National License 2012, and the advancement and changes in bodies of knowledge</p> <p>2. Organize seminars on the Program's provision of the learning and teaching</p>	<p>1. Presence of course descriptions and field experience details (Forms TQF 3-4) for all specified courses</p> <p>2. Development of the learning and teaching, and the conduct of evaluation of operational results as reported on the Form TQF 7 for the previous year</p>

Improvement/Modification Plan	Strategies	Evidence/Indicators
	<p>3. Encourage faculty members to continue education and develop academically/professionally</p>	<p>3. At least 80% of the program instructors participate in meetings to plan and review the Program's operation every academic year.</p> <p>4. All Program instructors have been developed academically and professionally for at least 15 hours/academic year</p>
<p>2. Develop the provision of student-centered learning</p>	<p>1. Develop new and Program instructors in aspects of medical education, teaching and evaluation</p> <p>2. Develop supporting resources for self-directed learning</p>	<p>1. All new faculty members have passed at least one medical education training exam within the first three years after starting to function in instructor positions</p> <p>2. Students' average satisfaction score toward the resources supporting the learning and teaching is 3.51 or higher out of 5.00.</p>

### Section 3. Educational Management System, Implementation and Curriculum Structure

#### 1. Educational Management System

##### 1.1 System

1) Semester system (phase 1 study on general education courses, science and mathematics foundation courses and three credits of electives)

2) Block system (phase 2 study on medical science, phase 3 clinical study and four credits of electives): Integrated multidisciplinary study, using problem-based learning

##### 1.2 Summer Session

No summer session is offered.

##### 1.3 Credit Equivalent to Semester System

The Faculty of Medicine provides the education in semesters. One academic year is divided into two compulsory academic semesters: semesters 1 and 2. One academic semester may span over any number of weeks, but each course must comprise the right number of teaching hours according to the hour-to-credit ratio-based calculation as follows.

(1) "Credit" means an academic credit normally given to students by a faculty.

(2) "One credit" means the period of time students spend learning in or out of classrooms or practicing at clinics, at in-patient wards, in the field or in communities each week, which comprises approximately 30-40 hours .

#### 2. Program Implementation

##### 2.1 Study Period

(1) Semester system

First semester: August-December

Second semester: January-May

Normal business days and hours

Outside of business days and hours, please specify.....

(2) Block system

Normal business days and hours



### 2.3 Problems of Newly Enrolled Students

2.3.1 Certain students may not know or understand the medical profession profile well enough or may not be sure whether they would really like to be in a medical school.

2.3.2 Problem of adjusting to tertiary education, which presents more freedom, various learning and other activities, as well as new friends, may lead to problems arising from time management and university life skills that may then result in poor academic achievements.

### 2.4 Strategies for Solving Problems/ Dealing with Limitations of Students Specified in Item 2.3

2.4.1 An orientation session for new students and their parents by the Faculty to introduce the students to the Program and the medical education

2.4.2 New friends-welcoming activities by senior students to advise on university life. One of the activities is for the new students to experience hospitals in the actual environment so that the students know the medical profession, and have the values and the professionalism to grow on them.

2.4.3 Advisor system, starting from the first year, with faculty members as advisors

2.4.4 Public relations or guidance for high-school students as regards the entrance examination, learning in a medical school and a medical profession profile, so that the students will understand the profession and the learning pattern

### 2.5 Student Enrollment Plan and Expected Numbers of Graduates in Five Years

There is a plan to admit 30 students yearly.

The Number of Students	The Number of Students in Each Academic Year				
	2013	2014	2015	2016	2017
First year	30	30	30	30	30
Second year		30	30	30	30
Third year			30	30	30
Fourth year				30	30
Fifth year					30
Sixth year					
<b>Total</b>					<b>150</b>
Expected to graduate					

## 2.6 Planned Budgets

The budgets are as follows.

<b>Personnel Budget</b>		<b>55,575,000 Baht</b>
Salaries/wages	55,575,000 Baht	
<b>Implementation Budget</b>		<b>46,312,500 Baht</b>
Compensations	23,156,250 Baht	
Sundry expenses	13,893,750 Baht	
Materials	6,946,875 Baht	
Utilities	926,250 Baht	
Benefits	1,389,375 Baht	
<b>Investment Budget</b>		<b>18,525,000 Baht</b>
Durable articles	18,525,000 Baht	
<b>Subsidy Budget</b>		<b>64,837,500 Baht</b>
Subsidies	27,787,500 Baht	
Miscellaneous expenses	9,262,500 Baht	
Fees paid to TU	27,787,500 Baht	
<b>Total</b>		<b>185,250,000 Baht</b>

Student expenses per capita: 950,000 (nine hundred fifty thousand) Baht per year, managed in the form of a special project, acquiring expenditure budgets from the agency's income

## 2.7 Teaching and Learning Mode

- Classroom mode
- Distant learning with publication as main source
- Distant learning via video conference
- E-learning
- Distant learning via Internet
- Others (please specify)

## 2.8 Credit Transfer, Course Transfer and Cross-University Registration

1) The course and credit transfer and the cross-university registration can be done in accordance with Articles 10.10 and 15 of Thammasat University Regulations on Higher Education 1997 (with amendments).

2) The cross-university registration criteria are as per the notification of Thammasat University on Criteria and Conditions for Cross-Project and Cross-University Registrations in Undergraduate Programs 2009.

### 3. Curriculum and Faculty Members

#### 3.1 Curriculum

##### 3.1.1 Number of Credits and Duration of Study

The whole Program has at least 258 credits in total.

**Duration of Study:** Divided into two groups according to qualifications of the enrolled.

Group 1 for those who have passed M. 6 (grade 12) or equivalent as acknowledged by the Ministry of Education: Must complete all the requirements for the degree in a minimum of six academic years (12 normal academic semesters) and a maximum of 12 academic years (24 normal academic semesters).

Group 2 for those who have graduated at Bachelor's Degree level or equivalent according to the requirements of the Student Selection Committee appointed by Thammasat University with an approval of the Faculty Committee. Students must complete all the requirements for the degree in a minimum of five academic years (10 usual academic semesters) and a maximum of 10 academic years (20 usual academic semesters). This student group will be exempted for phase 1 courses (general education courses, science foundation courses and three credits of electives).

##### 3.1.2 Curriculum Structure

Students are required to register in at least 258 credits of courses according to the the Program's composite structure and requirements as follows.

<b>1) General Education Courses</b>	34	credits
<b>2) Specialized Courses</b>	217	credits
2.1) Compulsory science foundation courses	6	credits
2.2) Compulsory basic medical science courses	76	credits
2.3) Professional courses	125	credits
2.4) Compulsory electives	10	credits
<b>3) Free Elective Courses</b>	7	credits

### 3.1.3 Courses

#### 3.1.3.1 Course Code

The code of a Program course consists of two letters and a three-number code and has the following meanings.

The letters MD denote the abbreviations of courses offered by the Faculty of Medicine.

The three numbers have the following meanings.

##### **The Third Number**

means the order of the course offered by each department / division.

##### **The Second Number (the Tens)**

For the basic medical science course:

Number 0 means a course provided by the academic service division.

Number 1 means a course provided by the Department of Preclinical Science.

Number 5 means a course provided by the Department of Community and Family Medicine.

Numbers 8 – 9 mean an elective course.

##### **For the Professional Courses:**

Number 0 means a course provided by the academic service division.

Number 1 means a course provided by the Department of Internal Medicine.

Number 2 means a course provided by the Department of Surgery.

Number 3 means a course provided by the Department of Pediatrics.

Number 4 means a course provided by the Department of Obstetrics and Gynecology.

Number 5 means a course provided by the Department of Community and Family Medicine.

Number 6 means a course offered by the Department of Pathology and Forensic Medicine.

Number 7 means a course provided by the Department of Emergency Medicine.

Numbers 8 – 9 mean an elective course.

##### **The First Number (the Hundreds)**

Number 0 means a course provided for students from other programs or faculties.

Number 1 means a course provided for first-year students.

Number 2 means a course provided for second-year students.

Number 3 means a course provided for third-year students.

Number 4 means a course provided for fourth-year students.

Number 5 means a course provided for fifth-year students.

Number 6 means a course provided for sixth-year students.

### 3.1.3.2 Courses

#### 1) General Education Courses

34 Credits

Students are required to attend classes covering at least 30 credits of general education courses according to the Program structure and compositions. The general education courses are divided into the following two parts.

**Part 1:** The University's generalized courses of 21 credits that are compulsory to all students. These courses are listed below.

Course Code	Course Title	Credits (lecture-practical-self study)
<b>Humanities</b>		Compulsory: 1 course, 2 credits
TU 110	Integrated Humanities	2(2-0-4)
<b>Social Sciences</b>		Compulsory: 2 courses, 5 credits
TU 100	Civic Education	3(3-0-6)
TU 120	Integrated Social Sciences	2(2-0-4)
<b>Science and Mathematics</b>		
<b>: Science</b>		Compulsory: 1 course, 2 credits
TU 130	Integrated Sciences and Technology	2 (2-0-4)
<b>: Mathematics or Computing</b>		Compulsory: 1 course, 3 credits
TU155	Elementary Statistics	3 (3-0-6)
<b>Language</b>		
TH 161	Thai Usage	3 (3-0-6)
or TH 160	Basic Thai	3 (3-0-6)

(For those students who have zero or too little Thai language proficiency to communicate in Thai, the Faculty may require that such students attend TH 160 Basic Thai instead of TH 161 Thai Usage.)

EL 070 English Course 1	0 (3-0-6)
EL 171 English Course 2	3 (3-0-6)
EL 172 English Course 3	3 (3-0-6)

**Part 2:** Students are required to attend classes covering 13 credits of the following courses according to course-related conditions pre-determined by the Faculty.

SC 142 Mathematics for Science	3(3-0-6)
SC 136 Physics	3 (3-0-6)
EL 217 Speaking and Listening for Academic Purposes	3 (3-0-6)
EL 317 Reading and Writing for Academic Purposes	3(3-0-6)
MD 100 Fundamental Ethics	1(1-0-2)

**2) Specialized Courses** **217 Credits**

**2.1 Science Foundation Courses** **6 Credits**

SC 114 Biology	3(3-0-6)
SC 124 Fundamental Chemistry for Medicine	2(2-0-4)
SC 174 Fundamental Chemistry for Medicine Laboratory	1(0-3-0)

**2.2 Basic Medical Science Courses** **76 Credits**

MD 200 Humanistic Medicine 1	1(1-0-2)
MD 201 Introduction to Medical Education	3(3-0-6)
MD 211 Introduction to Medical Sciences	6 (5-2-11)
MD 212 Skin and Musculoskeletal System	6(5-2-11)
MD 213 Thoracic Organ System	6(5-2-11)
MD 214 Alimentary System and Nutrition	6(5-2-11)
MD 215 Genitourinary System	4(3-2-7)
MD 216 Nervous System, Brain and Behavior	6(5-2-11)
MD 251 Holistic Health Care 1	4(3-2-7)
MD 300 Humanistic Medicine 2	1(1-0-2)
MD 311 Hematology and Lymphoreticular System	4(3-2-7)
MD 312 Infection and Immunology 1	4(3-2-7)
MD 313 Infection and Immunology 2	4(3-2-7)
MD 314 Endocrine System	4(3-2-7)
MD 315 The Cycle of Life	5(5-0-10)
MD 316 Application of Medical Sciences	6(6-0-12)
MD 351 Holistic Health Care 2	4(3-2-7)
MD 352 Biostatistics and Epidemiology	2(2-0-4)

**2.3 Professional Courses** **125 Credits**

MD 400 Medical Law and Ethics 1	1(1-0-2)
MD 401 Introduction to Clinic	3(1-4-4)
MD 411 Integrated Internal Medicine 1	6 (6-0-12)
MD 412 Integrated Internal Medicine 2	6 (0-12-6)
MD 421 Integrated Surgery 1	6 (6-0-12)
MD 422 Integrated Surgery 2	6(0-12-6)
MD 431 Integrated Pediatrics 1	3 (3-0-6)
MD 432 Integrated Pediatrics 2	3(0-6-3)
MD 441 Integrated Obstetrics-Gynecology 1	3 (3-0-6)
MD 442 Integrated Obstetrics-Gynecology 2	3(0-6-3)

MD 451 Holistic Health Care 3	4(2-4-6)
MD 500 Medical Laws and Ethics 2	1(1-0-2)
MD 501 Selective Specialty Care	6(1-10-7)
MD 511 Integrated Internal Medicine 3	3(3-0-6)
MD 512 Integrated Internal Medicine 4	3(0-6-3)
MD 521 Integrated Surgery 3	3 (3-0-6)
MD 522 Integrated Surgery 4	3 (0-6-3)
MD 531 Integrated Pediatrics 3	3(3-0-6)
MD 532 Integrated Pediatrics 4	3 (0-6-3)
MD 541 Integrated Obstetrics-Gynecology 3	3(3-0-6)
MD 542 Integrated Obstetrics-Gynecology 4	3(0-6-3)
MD 551 Holistic Health Care 4	4(2-4-6)
MD 561 Forensic Medicine	2(2-0-4)
MD 611 Practical Internal Medicine 1	2(2-0-4)
MD 612 Practical Internal Medicine 2	6(0-12-6)
MD 621 Practical Surgery 1	2(2-0-4)
MD 622 Practical Surgery 2	6(0-12-6)
MD 631 Practical Pediatrics 1	2(2-0-4)
MD 632 Practical Pediatrics 2	6(0-12-6)
MD 641 Practical Obstetrics-Gynecology 1	2(2-0-4)
MD 642 Practical Obstetrics-Gynecology 2	6(0-12-6)
MD 651 Holistic Health Care 5	4(1-6-5)
MD 661 Practical Orthopedic Surgery	4(2-4-6)
MD 671 Emergency Medicine	4 (1-6-5)

#### 2.4 Compulsory Elective Courses

10 Credits

The third-year students are required to select from the following courses to acquire six credits.

MD 381 Learning the Life of Rural Doctor	2(0-4-2)
MD 382 Technical Terms in Medicine	2(2-0-4)
MD 383 Basic Medical Photographic Production	2(0-4-2)
MD 384 Advance Medical Photographic Production	2(0-4-2)
MD 385 Sexology	2(2-0-4)

MD 386 Exercise Physiology	4(3-2-7)
MD 387 Neuroendocrinology	4(3-2-7)
MD 388 Research Experience in Medical Sciences	4(0-8-4)
MD 389 Principles of Pharmacology	2(2-0-4)
MD 390 Systemic Pharmacology	4(4-0-8)
MD 391 Experience in Clinical Nutrition	2(2-0-4)
MD 392 Topographic Anatomy	2(2-0-4)
MD 393 Common Parasitic Diseases in Thailand	2(2-0-4)
MD 394 Applied Microbiology 1	2(2-0-4)
MD 395 Medical Cell Biology	2(2-0-4)
MD 396 Research Experiences and Applications in Medicine	2(0-4-2)
MD 397 Molecular Medical Genetics	2(2-0-4)
MD 398 Molecular Biology in Medicine	4(4-0-8)
MD 399 Seminar on Journal Report	2(1-2-3)

The fifth-year students are required to select from the following courses to acquire four credits.

MD 581 Medical Professional Experience 1	4(0-4-2)
MD 582 Medical Professional Experience 2	4(0-4-2)
MD 583 Learning Experience in Foreign Country	4(0-4-2)
MD 584 Research Experience in Clinical Sciences	4(0-4-2)
MD 585 Selective Clinical Experience	4(0-4-2)
MD 586 Rehabilitation Medicine	2(1-2-3)
MD 587 Medical Website	2(1-2-3)
MD 588 Principle Thai Traditional Medicine	4(4-0-8)
MD 589 Clinical Pulmonary Medicine	2(1-2-3)
MD 590 Child and Adolescent Psychiatry	2(1-2-3)
MD 591 Clinical Experience inSpecialty 1	2(1-2-3)
MD 592 Clinical Experience inSpecialty 2	2(1-2-3)

### 3. Free Elective Courses

7 Credits

Students can select any courses offered at the Faculty of Medicine and Thammasat University as free elective courses to acquire an additional seven credits. These courses include general education and language courses.

3.1.4 Study Plan

First Academic Year			
First Semester		Second Semester	
TU 110 Integrated Humanities	2 credits	TU 100 Civic Education	3 credits
TU 120 Integrated Social Science	2 credits	TU 155 Elementary Statistics	3 credits
TU 130 Integrated Sciences and Technology	2 credits	SC124 Fundamental Chemistry for Medicine	2 credits
TH 161 Thai Usage	3 credits	SC 174 Fundamental Chemistry for Medicine Laboratory	
EL 171 English Course 2	3 credits		1 credit
SC 142 Mathematics for Science	3 credits	SC 136 Physics	3 credits
SC 114 Biology	3 credits	EL 172 English Course 3	3 credits
EL 217 Speaking and Listening for Academic Purposes		EL 317 Reading and Writing for Academic Purposes	
	3 credits		3 credits
		MD 100 Fundamental Ethics	1 credit
		Free elective courses	3 credits
Total 21 credits		Total 22 credits	

Second Academic Year			
First Semester		Second Semester	
MD 201 Introduction to Medical Education	3 credits	MD 200 Humanistic Medicine 1	1 credit
MD 211 Introduction to Medical Sciences	6 credits	MD 214 Alimentary System and Nutrition	6 credits
MD 212 Skin and Musculoskeletal System	6 credits	MD 215 Genitourinary System	4 credits
MD 213 Thoracic Organ System	6 credits	MD 216 Nervous System, Brain and Behavior	6 credits
		MD 251 Holistic Health Care 1	4 credits
Total 21 credits		Total 21 credits	

Third Academic Year			
First Semester		Second Semester	
MD 311 Hematology and Lymphoreticular System	4 credits	MD 300 Humanistic Medicine 2	1 credit
		MD 316 Application of Medical Sciences	6 credits
MD 312 Infection and Immunology 1	4 credits	MD 351 Holistic Health Care 2	4 credits
MD 313 Infection and Immunology 2	4 credits	MD 352 Biostatistics and Epidemiology	2 credits
MD 314 Endocrine System	4 credits	Compulsory elective courses	6 credits
MD 315 The Cycle of Life	5 credits		
<b>Total</b>	<b>21 credits</b>	<b>Total</b>	<b>19 credits</b>

Medicine Comprehensive Examination 1 is to be taken after completing all the major second- and third- year courses.

Fourth Academic Year			
First Semester		Second Semester	
MD 401 Introduction to Clinic	3 credits	MD 421 Integrated Surgery 1	6 credits
MD 411 Integrated Internal Medicine 1	6 credits	MD 422 Integrated Surgery 2	6 credits
MD 412 Integrated Internal Medicine 2	6 credits	MD 441 Integrated Obstetrics-Gynecology 1	3 credits
MD 431 Integrated Pediatrics 1	3 credits	MD 442 Integrated Obstetrics-Gynecology 2	3 credits
MD 432 Integrated Pediatrics 2	3 credits	MD 451 Holistic Health Care 3	4 credits
MD 400 Medical Law and Ethics 1	1 credit		
<b>Total</b>	<b>22 credits</b>	<b>Total</b>	<b>22 credits</b>

Fifth Academic Year			
First Semester		Second Semester	
MD 511 Integrated Internal Medicine 3	3 credits	MD 541 Integrated Obstetrics-Gynecology 3	3 credits
MD 512 Integrated Internal Medicine 4	3 credits	MD 542 Integrated Obstetrics-Gynecology 4	3 credits
MD 521 Integrated Surgery 3	3 credits	MD 551 Holistic Health Care 4	4 credits
MD 522 Integrated Surgery 4	3 credits	MD 561 Forensic Medicine	2 credits
MD 531 Integrated Pediatrics 3	3 credits	MD 501 Selective Specialty Care	6 credits
MD 532 Integrated Pediatrics 4	3 credits	Compulsory elective courses	4 credits
MD 500 Medical Laws and Ethics 2	1 credit		
<b>Total</b>	<b>19 credits</b>	<b>Total</b>	<b>22 credits</b>

Medicine Comprehensive Examination 2 is to be taken after completing all the major fourth- and fifth- year courses.

Sixth Academic Year			
First Semester		Second Semester	
MD 611 Practical Internal Medicine 1	2 credits	MD 641 Practical Obstetrics-Gynecology 1	2 credits
MD 612 Practical Internal Medicine 2	6 credits	MD 642 Practical Obstetrics-Gynecology 2	6 credits
MD 621 Practical Surgery 1	2 credits	MD 651 Holistic Health Care 5	4 credits
MD 622 Practical Surgery 2	6 credits	MD 661 Practical Orthopedic Surgery	4 credits
MD 631 Practical Pediatrics 1	2 credits	MD 671 Emergency Medicine	4 credits
MD 632 Practical Pediatrics 2	6 credits	Free elective courses	4 credits
<b>Total</b>	<b>24 credits</b>	<b>Total</b>	<b>24 credits</b>

**Remark:** The fourth- to sixth-year study is arranged in the form of student groups rotating for each course throughout the year.

### 3.1.5 Course Description

#### General Education Courses: Part 1

#### Humanities

##### TU 110 Integrated Humanities

2 (2-0-4)

To study the history of human beings in different periods, reflecting their beliefs, ideas, intellectual and creative development. To instill analytical thinking, with an awareness of the problems that human societies are confronting, such as the impacts of: technological development, violence, wars and various world crises so that we can live well in a changing world.

#### Social Sciences

##### TU 100 Civic Education

3 (3-0-6)

Study of principles of democracy and government by rule of law. Students will gain understanding of the concept of "citizenship" in a democratic rule and will have opportunity for self-development to become a citizen in a democratic society and to take responsibility in addressing issues in their society through real-life practices.

**TU 120 Integrated Social Sciences**

**2 (2-0-4)**

This interdisciplinary course focuses on the fact that social sciences play an important role for society. The course explains the origins of the social sciences and the modern world, the separation of social sciences from the pure sciences and the acceptance of the scientific paradigm for the explanation of social phenomenon. It also involves the analysis of important disciplines, concepts, and major theories of the social sciences by pointing out strengths and weaknesses of each one. Included is the analysis of contemporary social problems, using knowledge and various perspectives—individual, group, macro-social, national and world perspectives-- to view those problems.

**Science and Mathematics**

Science

**TU 130 Integrated Sciences and Technology**

**2 (2-0-4)**

To study basic concepts in science, scientific theory and philosophies. Standard methods for scientific investigations. Important evolutions of science and technology influencing human lives as well as the impacts of science and technology on economies, societies and environments. Current issues involving the impacts of science and technology on morals, ethics and human values

**TU 155 Elementary Statistics**

**3 (3-0-6)**

To identify the Nature of statistical problems; review of descriptive statistics; probability; random variables and some probability distributions (binomial, poisson and normal) ; elementary sampling and sampling distributions; estimation and hypotheses testing for one and two populations; one-way analysis of variance; simple linear regression and correlation; chi-square test.

Language

Thai

**TH. 160 Basic Thai**

**3 (3-0-6)**

(For students with zero or little Thai proficiency, or as approved by the Thai Language Department)

Basic Thai language – alphabet, vocabulary, phrases, and sentences. It also provides the four basic skills: listening, speaking, reading and writing.

Remarks

1. Learners must be students with zero or so little Thai proficiency because of their long-term residency or study in foreign countries or international programs that they cannot communicate in Thai.

2. Faculties or projects with the above student groups can require that the students register in TH 160, but if the Department found that the students have sufficient knowledge to study in the TH 161 level, the Department will continue to have the students withdraw from TH 160 and register in TH 161.

3. In cases that undergraduate programs of faculties or projects require that the students attend two General Education courses in the Thai category, namely TH161 and TH 162, or TH 161 and TH 163, then, if there are students in the category of item 1, the faculties or projects can arrange for the students to register in two courses, namely TH 160 Basic Thai and TH 161 Thai Usage.

**TH 161 Thai Usage**

**3 (3-0-6)**

Thai language usage skills: listening, reading, writing and speaking, with emphases on drawing the main idea, communicating knowledge, thoughts and composing properly.

English

**EL 070 English Course 1**

**0 (3-0-6)**

Pre-requisite: Language Institute placement

A non-credit course designed for those students with low command of English and thus unable to enroll directly into English Foundation Course. (The assessment criteria are 'S' for Satisfactory or 'U' for Unsatisfactory and will not be counted towards the students' total credits and GPA.)

A preparatory course designed to enable students to cope up with real English use of four basic integrated skills of listening, speaking, reading and writing.

**EL 171 English Course 2**

**3 (3-0-6)**

**EL 171 English Course 2**

Pre-requisite: EL 070 or Language Institute placement

An intermediate English course designed to promote the four integrated skills to develop students' English proficiency at a higher level.

**EL 172 English Course 3**

**3 (3-0-6)**

Pre-requisite: EL 171 or Language Institute placement

An upper-intermediate English course to enable students to use integrated skills at a more sophisticated level than the prior course, especially in speaking and writing.

General Education Courses: Part 2

**MD 100 Fundamental Ethics**

**1 (1-0-2)**

Human behaviors and influencing factors, rights, freedom and roles of individuals, the building of healthy relationships, being part of society, principles of ethics, analysis and decision making in ethics.

**SC 136 Physics**

**3 (3-0-6)**

Principles of mechanics, fluid mechanics, thermodynamics, mechanical waves, electromagnetic waves, optics, modern physics, applications in health science and medical science.

**EL 217 Speaking and Listening for Academic Purposes**

**3 (3-0-6)**

Prerequisite:

Extensive practice in English oral communication and listening skills in various settings and for a wide range of academic purposes, developing techniques and strategies for speaking in public, practicing making oral presentations and participating in group discussions, practicing listening to materials from a variety of sources such as lectures, seminars and news reports.

**EL 317 Reading and Writing for Academic Purposes**

**3 (3-0-6)**

Prerequisite: EL 217

A course to develop reading comprehension and academic writing skills; reading a wide range of materials such as textbooks, articles, reports and newspapers; improving paragraph and essay writing skills through process writing: brainstorming, outlining, drafting, peer editing and revising, topic sentence writing, giving relevant supporting details, writing a conclusion.

Specialized Courses: Science Foundation Courses

**SC114 Biology**

**3 (3-0-6)**

Cell types and structures; cytoskeleton and cell mobility; biological energy; cellular respiration; cell membrane structure and functions; cellular reproduction; cellular communication; Mendel's genetics; biomolecule structures, functions and metabolism; gene expression and control

**SC 124 Fundamental Chemistry for Medical Students 2 (2-0-4)**

Hybridization of Carbon, Stereochemistry, Nomenclature and Reactions of Organic Compounds, Alkanes, Alkenes, Alkynes and Aromatic Hydrocarbons, Alkyl and Aryl Halides, Alcohols and Phenols, Ethers, Aldehydes and Ketones, Carboxylic Acids and their Derivatives, Amines, Carbohydrates, Amino Acids, and Lipids.

**SC 174 Fundamental Chemistry Laboratory For Medical Students 1 (0-3-0)**

Pre-requisite: Having attended or is attending SC 124

Experiments related to contents in SC124

**Specialized Courses: Basic Medical Science Courses**

**MD 200 Humanistic medicine 1** **1 (1-0-2)**

The learning and teaching of this course are integrated throughout the second-year study.

Understanding ourselves and other people, developing sympathy, effective communication, team working, conflict and stress management, social service, analyzing and making decisions over the ethical issues.

**MD 201 Introduction to Medical Education** **3 (3-0-6)**

Principle of medical education, philosophy and objectives of the Thammasat Medical curriculum, outcome graduates, learning method and evaluation, medical history, medical ethics, present role of physician, evidence-based medicine, medical basic skills, student-centered learning, problem-based learning and community-based learning, holistic approach; practice for self-directed learning from different learning resources, information gathering and analysis, critical thinking, hypothesis proving by scientific reasons, effective listening and speaking.

**MD 211 Introduction to Medical Sciences** **6 (5-2-11)**

Studies of general life-form fundamentals -- from the gene and/or molecular level to the functions of cells, organs and bodies. This subject includes the study of structures and functions of cells such as functions of enzymes, inter- and intracellular signaling, human genetics (i.e. replication of DNA, transcriptional control, and translation process), control of intra- and extracellular environment, cellular transporting system, cellular metabolism, interaction of cells to foreign agents (i.e. microbes, drugs, chemical agents). The subject also includes the study of the development of cells into tissues, organs and body from both normal processes and abnormal processes such as the development of tumors or cancers.

**MD 212 Skin and Musculoskeletal System** **6 (5-2-11)**

Structure and 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). Scopes of this subject include the embryonic development of these systems, 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 as well as the pharmacology knowledge for skin

and musculoskeletal systems (i.e. common drugs and their mechanism of actions and adverse effects) are also included.

**MD 213 Thoracic Organ System**

**6 (5-2-11)**

Structure and function of cardiovascular and respiratory systems. This subject expands from the molecular physiology of the thoracic organs to their functioning (i.e. blood circulating, respiring, and gas exchanging). An embryonic development of these thoracic organs, the controlling mechanisms, the biochemistry, and common abnormalities of the cardiovascular and respiratory systems as well as their epidemiology, pathophysiology, and therapeutic aspects are included in this subject. Common drugs used in these systems and their mechanisms of actions and adverse effects are also incorporated.

**MD 214 Alimentary system and Nutrition**

**6 (5-2-11)**

Anatomy, including gross anatomy and histology, and physiology of organs of the digestive system which include alimentary track (mouth and oral cavity, esophagus, stomach, small and large intestine, rectum and anus), liver, gall bladder, and pancreas. The scope of this subject includes the molecular mechanism and biochemistry of functions of the alimentary system (i.e. digestion and absorption); an embryonic development of the digestive system; synthesis, storage and functions of digestive enzymes and their controlling mechanism; and synthesis and metabolism of bile. The subject also extends to the fundamentals of metabolism: nutritional metabolism (including protein, carbohydrates, fats, vitamins, and mineral metabolism); energy consumption and expenditure; and body temperature. Abnormalities (both anatomic and physiologic abnormalities) and pathology of the digestive system; nutritional problems (i.e. malnutrition or over-weight); food toxicology; and pharmacology or drugs commonly used in this digestive system are also included.

**MD 215 Genitourinary System**

**4 (3-2-7)**

Anatomy (gross and histology), embryology, physiology of the genitourinary system. Biochemistry, physiology and functions of kidney and glomerulous units including controlling of water, acid-base balancing, urine production. Mechanism and controls of the micturation process. Histology, physiology and molecular aspects of gametogenesis and fertilization. Physiological and biochemistry change during menstruation cycle. Common abnormal conditions of the urogenital

system and their pathology. Pharmacology (drugs used in the genitourinary system) including the mechanism of drug actions and adverse reactions.

**MD 216 Nervous System, Brain and Behavior**

**6 (5-2-11)**

Scope of this subject includes neuroanatomy at gross and histology levels, embryonic development 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, the spinothalamic tract, optical pathway, auditory pathway, and olfactory pathway as well as the autonomic and peripheral nervous systems are emphasized. Important neural structures/tracts, such as spinal cords, cranial nerves, brain and sensory receptors, as well as the cerebrospinal fluid system, are also highlighted in this course. The physiology of neuron extends to the molecular mechanism of important structures such as neuromuscular junction, synapses, and motor neuron units. Common abnormalities and pathology of the nervous system are also emphasized. This course further extends to the behavioral sciences as well as drugs used in the nervous system and drugs for the psychological problem.

**MD 251 Holistic Health Care 1**

**4 (3-2-7)**

The meaning of holistic health care in all aspects of health, health system, health indicators and social index, the health situation in each age group and specific groups, family and community experiences by use of a holistic approach, data and information resources, factors affecting the individual, family and community health, community-study methods related to social and cultural context.

Field visit and community practice required in this course.

**MD 300 Humanistic Medicine 2**

**1 (1-0-2)**

The learning and teaching of this course are integrated throughout the third year of study.

The doctor-patient relationship, communication, interviewing patient and family, health promotion, basic medical ethics, principles of analysis and decision making in medical ethics, the practice of helping people and society.

**MD 311 Hematology and Lymphoreticular System**

**4 (3-2-7)**

Structure, morphology, embryonic development, and functions of hematological organs are part of this course. The scope of this study extends from the origin of the 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, platelet aggregation and thrombolysis, as well as the abnormalities or malfunctioning of these pathways, are also emphasized. Pathophysiology of common hematological problems (i.e. hemophilia, thalassemia, aplastic anemia, etc.) and their therapeutic aspects are included as part of this course.

**MD 312 Infection and Immunology 1**

**4 (3-2-7)**

This course includes structure, morphology, and functions of the 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 transplantation, concepts of vaccination; concepts of laboratory investigations for immunological diseases. Another part of this course also includes basic principles of medical bacteriology: bacterial classification; bacterial morphology and cellular structure; cell-wall synthesis; bacterial metabolism and growth; bacterial genetics; mechanisms of bacterial pathogenesis; pathology of bacterial infections. It also emphasizes the common infectious diseases caused by bacteria in the following aspects: clinical features; laboratory diagnosis; epidemiology; pathogenesis; and treatment and prevention. Pharmacology of antibacterial agents is also included in this course.

**MD 313 Infection and Immunology 2**

**4 (3-2-7)**

Pre-requisite: A passing level in MD 312 Infection and Immunology 1

This course focuses on basic principles of medical virology, mycology and parasitology. These include classification, structure, replication, and mechanisms of pathogenesis of these infectious agents. The course emphasizes common infectious diseases caused by viruses, fungi, protozoa and parasites in the following aspects: clinical features; laboratory diagnosis; epidemiology; pathogenesis; and treatment and prevention. Pharmacology of antiviral, antifungal, and antiparasitic agents is also included in this course.

**MD 314 Endocrine System**

**4 (3-2-7)**

Structure and functions of the endocrine system. The course includes an embryonic development of endocrine organs, physiology and biochemistry of endocrine organs and their hormones; hormonal actions and metabolisms; controlling mechanisms of hormonal release; abnormal conditions and pathology of diseases of the endocrine system (including clinical features, and laboratory diagnosis of those diseases). The course also emphasizes the pharmacology and drugs used to treat the endocrine system.

**MD 315 The Cycle of Life**

**5 (5-0-10)**

The scope of this course includes the fertilization, tissue/organ development, embryology, and development milestones from infant period to adult and to elder. Physiological, anatomical, biochemical and even psychological changes during each period of life are emphasized in this course, as well as the concepts and theory of aging. The course also focuses on the psycho-social aspects of the elderly. Geriatric medicine and pharmacology are also included in this subject.

**MD 316 Application of Medical Sciences**

**6 (6-0-12)**

This course allows learners to review overall knowledge and to apply the knowledge to the common pathological conditions of various organ systems. Scopes of this course include fundamentals of pathology (pathogenesis, pathology, signs and symptoms of common diseases); cellular injury; apoptosis; fundamentals of neoplasia; basic principles of biopsy and autopsy. The course also extends to the concept of holistic care; principles of pharmacology (i.e. pharmacodynamics, pharmacokinetics, and clinical pharmacology); principles of disease control and prevention; principles of medical rehabilitation.

**MD 351 Holistic Health Care 2**

**4 (3-2-7)**

Pre-requisite: A passing level in MD 251 Holistic Health Care 1

Individual, family and community health analysis, community health diagnosis, project plan, process, and evaluation by integrated medical social sciences, medical sciences, health sciences, and behavioral sciences. Individual, family and community health promotion in each age group and specific groups, community study methods related to social and cultural context.

Field visit and community practice required in this course.

**MD 352 Biostatistics and Epidemiology**

**2 (2-0-4)**

Basic biostatistics, statistics for epidemiologic research, point estimate and interval estimate, epidemiologic study design and common error in epidemiologic research, screening test, , hypothesis testing in one sample and two samples.

**Specialized Courses: Professional Courses**

**MD 400 Medical Law and Ethics 1** **1 (1-0-2)**

The learning and teaching of this course are integrated throughout the fourth year of study.

Application of legal ethics in practice; objective of professional and medical characteristics; social changes which impact medical services and practice; principle of ethics in practice; character of ethical problems in medicine; ethical analysis and decision making.

**MD 401 Introduction to Clinic** **3 (1-4-4)**

Signs and symptoms of common diseases; clinical skills such as history taking, physical examination, medical records, specimen collection, laboratory and radiology investigation and result interpretation, rational drug use; basic medical procedural skills, basic practice in operating room and patient unit; assessment of patient problem; clinical analysis, reasoning and decision making; communication; principle of counseling patients and their families; ethical practice.

**MD 411 Integrated Internal Medicine 1** **6 (6-0-12)**

Basic knowledge of health, diseases and common important symptoms of internal medicine, psychiatry, ophthalmology and otolaryngology in age group above 15 years old; by integration of many fields of related knowledge, awareness of community problems and medical council standards; focusing on problem solving and holistic health care; professional virtues and ethics.

**MD 412 Integrated Internal Medicine 2** **6 (0-12-6)**

Clinical skills in internal medicine and psychiatric patients such as interviewing and history taking, physical examination, differential diagnosis, laboratory and radiology investigation and result interpretation; basic procedural skills with indication and contraindication and complication; information gathering, medical records, team work with medical personnel; communication skills, counseling patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training

**MD 421 Integrated Surgery 1** **6 (6-0-12)**

Basic knowledge of health, diseases and common important symptoms in surgery, orthopedics surgery, and patients who need operation; patient assessment and care in pre-operative, peri-operative and post-operative stages, prevention of side effects from operation by integration of

many related fields; focusing on problem solving and holistic health care; professional virtues and ethics.

**MD 422 Integrated Surgery 2**

**6 (0-12-6)**

Clinical skills in surgical patients and surgical orthopedics such as interviewing and history taking, physical examination, differential diagnosis, laboratory and radiology investigation and result interpretation, basic procedural skills with indication and contraindication and complication, information gathering and medical record; cooperative working with medical personnel; communication skill, counseling patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided.

**MD 431 Integrated Pediatrics 1**

**3 (3-0-6)**

Growth and development including physique, mentality and sociality; nutritional status; immune promotion; normal and abnormal behavior; symptoms and commonly recognized diseases in children from newborns to 15-year olds; integration of many fields of knowledge relating to these age groups; study including etiology, epidemiology, symptoms and signs, diagnosis; family and community problems that cause these abnormal conditions and diseases and their impacts; aim to treatment, prevention, rehabilitation, promotion and health maintenance at individual, family and community level; focus on problem solving and holistic health care; professional virtues and ethics.

**MD 432 Integrated Pediatrics 2**

**3 (0-6-3)**

Clinical skills in patients from newborns to 15-year olds, such as interviewing and history taking, physical examination, differential diagnosis, laboratory and radiology investigation and result interpretation; basic procedural skills with indication and contraindication and complication; information gathering, medical records, team working with medical personnel; communication skills, counseling patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided

**MD 441 Integrated Obstetrics-Gynecology 1**

**3 (3-0-6)**

Basic knowledge of health, diseases and common important symptoms in women by integration of many fields of related knowledge, health assessment and health promotion in all stages

of women, gynecological endocrine system, normal and abnormal condition of pregnancy and delivery, care of women during pregnancy, labor and post-partum recovery; infant and newborn care; family planning; problem solving and holistic health care for patients and families; professional virtues and ethics.

**MD 442 Integrated Obstetrics-Gynecology 2**

**3 (0-6-3)**

Clinical skills such as such as interviewing and history taking, physical examination and basic procedural skills; normal delivery; laboratory and radiology investigation and result interpretation that aim to diagnosis, treatment planning and problem solving for women patients and pregnant women by emphasis on holistic health care and treatment, data gathering and medical record; cooperative working with medical personnel; communication, counseling with patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided

**MD 451 Holistic Health Care 3**

**4 (2-4-6)**

Pre-requisite: A passing level in MD 351 Holistic Health Care 2

Health service system and health administration in primary care, health promotion and health prevention in individual, family and community, doctor-patient relationship, consultation skills for individual, family and community health care, physician's roles and responsibilities in society, basic principle in research methodology

Primary care unit visit and field work training provided.

**MD 500 Medical Laws and Ethics 2**

**1 (1-0-2)**

The learning and teaching of this course are integrated throughout the Doctor of Medicine Program.

Pre-requisite: Passing levels in MD 100 Fundamental Ethics; MD 411, 412 Integrated Internal Medicine 1, 2; MD 421, 422 Integrated Surgery 1, 2; MD 431, 432 Integrated Pediatrics 1,2 and MD 441, 442 Integrated Obstetrics-Gynecology 1, 2

Continuing study from Medical Law and Ethics 1

**MD 501 Selective Specialty Care**

**6 (1-10-7)**

Pre-requisite: Passing levels in MD 411, 412 Integrated Internal Medicine 1, 2; MD 421, 422 Integrated Surgery 1, 2; MD 431, 432 Integrated Pediatrics 1, 2 and MD 441, 442 Integrated Obstetrics-Gynecology 1, 2

Clinical skill practice relying on standard criteria of medical counseling of patients of ophthalmology, otolaryngology, orthopedic surgery, rehabilitation medicine and anesthesiology.

**MD 511 Integrated Internal Medicine 3**

**3 (3-0-6)**

Pre-requisite: Passing levels in MD 411, 412 Integrated Internal Medicine 1, 2

Enhancing knowledge and skills from Integrated Internal Medicine 1&2 with emphasis on systematic diseases, emergency or more complicated problems in internal medicine by integration and application of many fields of related knowledge; focusing on holistic care of patient; analysis and decision making, and related medical ethics issues.

**MD 512 Integrated Internal Medicine 4**

**3 (0-6-3)**

Pre-requisite: Passing levels in MD 411, 412 Integrated Internal Medicine 1, 2

Additional practice with inpatients and outpatients of internal medicine and psychiatry, to improve skills and capabilities in patient assessment, treatment planning and holistic health care, laboratory and radiology investigation and result interpretation, data gathering and medical record; cooperative working with medical personnel; communication, counseling with patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided

**MD 521 Integrated Surgery 3**

**3 (3-0-6)**

Pre-requisite: Passing levels in MD 421, 422 Integrated Surgery 1, 2

Enhancing skills and knowledge from Integrated Surgery 1&2 with emphasis on systematic diseases, emergency or more complicated problems in surgery, by integration and application many fields of related knowledge; focusing on holistic care of patient; analysis and decision making, and related medical ethics issues.

**MD 522 Integrated Surgery 4**

**3 (0-6-3)**

Pre-requisite: Passing levels in MD 421, 422 Integrated Surgery 1, 2

Additional practice with patients, who needed operation both of inpatients and outpatients, to develop skills and capabilities in patient assessment, treatment planning, holistic health care; laboratory and radiology investigation and result interpretation, patient monitoring, data gathering and medical records; assist in the operation; practice basic procedural skills of operation; communication; counseling patients and families; practice with professional morals and ethics.

sStudy tour at related institution and field work training provided

**MD 531 Integrated Pediatrics 3**

**3 (3-0-6)**

Pre-requisite: Passing levels in MD 431, 432 Integrated Pediatrics 1, 2

Enhancement of knowledge and skills from Integrated Pediatrics 1&2 with emphasis on systematic diseases, emergency or more complicated problems in Pediatrics by integration and application of many fields of related knowledge; focusing on holistic care of patient; analysis and decision making, and related medical ethics issues.

**MD 532 Integrated Pediatrics 4**

**3 (0-6-3)**

Pre-requisite: Passing levels in MD 431, 432 Integrated Pediatrics 1, 2

Additional practice with inpatients and outpatients from neonates to 15 year-olds, to improve skills and capabilities in patient assessment, treatment planning and holistic health care, laboratory and radiology investigation and result interpretation, data gathering and medical records; cooperative working with medical personnel; communication, counseling with patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided

**MD 541 Integrated Obstetrics-Gynecology 3**

**3 (3-0-6)**

Pre-requisite: Passing levels in MD 441, 442 Integrated Obstetrics-Gynecology 1, 2

Enhancement of knowledge and skills from Obstetrics-Gynecology 1&2 with emphasis on gynecological diseases, emergency or more complicated problems in Obstetrics-Gynecology by integration and application of many fields of related knowledge; focusing on holistic care of patient; analysis and decision making, and related medical ethics issues.

**MD 542 Integrated Obstetrics-Gynecology 4**

**3 (0-6-3)**

Pre-requisite: Passing levels in MD 441, 442 Integrated Obstetrics-Gynecology 1, 2

Additional practice with women as both inpatients and outpatients to improve skills and capabilities in patient assessment, treatment planning and holistic health care for women patient and pregnant women, laboratory and radiology investigation and result interpretation, data gathering and medical records; cooperatively working with medical personnel; communication, counseling with patients and their families; practice with professional ethics and morals.

Study tour at related institution and field work training provided

**MD 551 Holistic Health Care 4**

**4 (2-4-6)**

Pre-requisite: Passing levels in MD 411, 412 Integrated Internal Medicine 1, 2 and MD 451 Holistic Health Care 3

Health and medical service in primary and secondary care based on principle of Family Medicine and Community Medicine, health service system and health administration, referral system, health economics, health promotion and health prevention in the individual, family and community, journal appraisal.

Rural hospital visit and practice required in this course.

**MD 561 Forensic Medicine**

**2 (2-0-4)**

Principles and methods of applied medical, scientific and legal knowledge with court procedure, medico-legal autopsy, practice with forensic patients, collecting evidence for investigation, performing as witness at court; applied legal, art and ethical issues with the medical profession.

Study tour at related institution and field work training provided

**MD 611 Practical Internal Medicine 1**

**2 (2-0-4)**

Pre-requisite: Passing levels in MD 511, 512 Integrated Internal Medicine 3, 4

Enhancement of knowledge, skills and experience from Integrated Internal Medicine 1, 2, 3 and 4, including review of pharmacology and pharmacokinetics that rely on the principle of rational drug prescribing with emphasis on applied knowledge to the process of problem analysis, differential diagnosis, holistic health care, prevention and health promotion.

Study tour at related institution and field work training provided

**MD 612 Practical Internal Medicine 2**

**6 (0-12-6)**

Pre-requisite: Passing levels in MD 511, 512 Integrated Internal Medicine 3, 4

Practice as internship doctor in internal medicine both of inpatients and outpatients, including critical illness, emergency conditions; emphasis on clinical skill, technical skills, communication skills, problem solving, holistic health care, appropriate referring, consultation with specialists; education and counseling for patients and their families; cooperatively working with medical personnel; practice for decision making with awareness of professional ethics, virtues and etiquettes that aim toward being a qualified physician.

Study tour at related institution and field work training provided

**MD 621 Practical Surgery 1**

**2 (2-0-4)**

Pre-requisite: Passing levels in MD 521, 522 Integrated Surgery 3, 4

Enhancing knowledge, skills and experiences from Integrated Surgery 1, 2, 3 and 4, including review pharmacology and pharmacokinetics that rely on principle of rational drug prescribing, by emphasize on applied knowledge to process of problem analysis, differential diagnosis, holistic health care, and prevention and health promotion.

Study tour at related institution and field work training provided

**MD 622 Practical Surgery 2**

**6 (0-12-6)**

Pre-requisite: Passing levels in MD 521, 522 Integrated Surgery 3, 4

Practice as internship doctor with surgical patient on both inpatient and outpatient including critical illness, urgent and emergency condition, by emphasis on surgical skills; holistic problem solving, appropriate referring, consultation with specialists, communication with patient and their families; education and counseling for patients and their families; cooperatively working with medical personnel; practice and decision making with awareness of professional ethics, virtues and etiquettes that aim toward being a qualified doctor.

Study tour at related institution and field work training provided

**MD 631 Practical Pediatrics 1**

**2 (2-0-4)**

Pre-requisite: Passing levels in MD 531, 532 Integrated Pediatrics 3, 4

Enhancing knowledge, skills and experiences from Integrated Pediatrics 1, 2, 3 ,and 4, including review of clinical pharmacology and pharmacokinetics that aim to rational drug prescribing with pediatric patients, by emphasize on applied knowledge to problem analysis, differential diagnosis; holistic health care of children, prevention and health promotion.

Study tour at related institution and field work training provided

**MD 632 Practical Pediatrics 2**

**6 (0-12-6)**

Pre-requisite: Passing levels in MD 531, 532 Integrated Pediatrics 3, 4

Practice with neonates and child patients as internship doctor on both outpatient and inpatient including newborn unit, by emphasis on professional skills, holistic problem solving in all conditions including emergency conditions, communication with patients and their families, team working with medical personnel and other public health authorities, practice decision making with awareness of professional ethics, virtues and etiquettes that aim toward being a qualified doctor in the future.

Study tour at related institution and field work training provided

**MD 641 Practical Obstetrics-Gynecology 1**

**2 (2-0-4)**

Pre-requisite: Passing levels in MD 541, 542 Integrated Obstetrics-Gynecology 3, 4

Enhancement of knowledge, skills and experiences from Integrated Obstetrics-Gynecology 1, 2, 3, and 4, including review of clinical pharmacology and pharmacokinetics that aim to rational drug prescribing; with emphasis on applied knowledge to problem analysis process, differential diagnosis, health care for women patients and pregnant women by holistic approach, family planning and infertile problem solving, health prevention and maintenance of women at each age.

Study tour at related institution and field work training provided

**MD 642 Practical Obstetrics-Gynecology 2**

**6 (0-12-6)**

Pre-requisite: Passing levels in MD 541, 542 Integrated Obstetrics-Gynecology 3, 4

Practice as internship doctor with women patients and pregnant women as both inpatients and outpatients including critical illness with emphasis on professional skills and procedural skill of obstetrics-gynecology, delivery practice, assisting in the operation; holistic problem solving in

emergency conditions; appropriate referring; consultation with specialists; communication with patients and their families; education and consultation for patients and their families; team working with medical personnel; practice and decision making with awareness of professional ethics, virtues and etiquettes that aim toward being a qualified doctor.

Study tour at related institution and field work training provided

**MD 651 Holistic Health Care 5**

**4 (1-6-5)**

Pre-requisite: Passing levels in MD 511, 512 Integrated Internal Medicine 3, 4 and MD 551 Holistic Health Care 4

Medical practice based on principle of Family Medicine and Community Medicine in primary care setting, National Health Policy in Health Promotion and prevention, research in primary care.

Medical and research practice required in this course

**MD 661 Practical Orthopedic Surgery**

**4 (2-4-6)**

Pre-requisite: Passing levels in MD 501 Selective Specialty Care and MD 521, 522 Integrated Surgery 3, 4

Practice as internship doctor with aim of clinical problem solving for both orthopedic inpatient and outpatient, including emergency condition; emphasize on information collecting, problem analysis, disease and abnormal-condition diagnosis; treatment planning and holistic health care; enhancement of skills, professionalism and experiences concerning procedural skills in orthopedics and assistance in the operation; consultation with specialists and appropriate referring; communication with patient and their families; education and counseling for patients and their families; prevention of disability and rehabilitation with awareness of physical, mental, social, economic elements; team working with medical personnel; decision making with respect to professional virtues, ethics, etiquettes that aim toward being a qualified doctor.

Study tour at related institution and field work training provided

**MD 671 Emergency Medicine**

**4 (1-6-5)**

Pre-requisite: Passing levels in MD 511, 512 Integrated Internal Medicine 3, 4; MD 521, 522 Integrated Surgery 3, 4; MD 531, 532 Integrated Pediatrics 3,4 and MD 541, 542 Integrated Obstetrics-Gynecology 3,4

Practice as internship doctor in emergency room for professional skills, enhancement of experiences in initial management for patients in critical and emergency condition, accident patients; consultation with specialists, appropriate referring for further treatment; communication with patients and their families; education and consultation for patients and their families; principle of group accidental administration; team working with medical personnel; practice and decision making with awareness of professional ethics, virtues and etiquettes that aim toward being a qualified doctor.

**Compulsory Elective Courses**

**MD 381 Learning the life of rural doctor** **2 (0-4-2)**

Selective learning experience about life and work of doctor in rural hospital, doctor and patient relationship in rural area, team work among doctor and other health personnel, function and social responsibilities of doctor.

**MD 382 Technical terms in medicine** **2 (2-0-4)**

Technical terms frequently used in medicine, their meaning, how they are used, as well as the basic practical concepts of meaning-and-spelling search.

**MD 383 Basic Medical Photographic Production** **2 (0-4-2)**

Theory of camera (both film and digital), technique of photographic production, including instrument and process of medical photographic production, related meaning of photograph with pathology of patients and medical procedures

**MD 384 Advance Medical Photographic Production** **2 (0-4-2)**

Theory of photography technique in various situations, including instruments in complex photography, with emphasis on process of medical photographic production, related meaning of photograph with pathology of cells and microorganisms

**MD 385 Sexology** **2 (2-0-4)**

Integrated knowledge of anatomy, physiology, pharmacology, microbiology, immunology, virology, parasitology, including psychology and social, for holistic understanding, appropriate attitude and core values in sexology.

Study tourat related institution and field work training provided

**MD 386 Exercise Physiology** **4 (3-2-7)**

Physiologic change of body in its responsiveness to different exercises in levels of molecule, cell, tissue and organ; result of long-term and short-term exercise with each physical systems including physical capability promotion.

**MD 387 Neuroendocrinology**

**4 (3-2-7)**

Functions in each group of brain neurons and functions with hormone synthesis and release of hypothalamus, pituitary gland and target organ, including controlling feedback-mechanism system and related behaviors such as drinking, eating, interaction with body immune system.

**MD 388 Research experience in Medical Sciences**

**4 (0-8-4)**

Basic principles and research methodology of medical sciences that are of interest to the student, research question and hypothesis, scientific-literature reviewing, research designing in small project, sampling, measuring and information analysis, conclusion, writing and presentation.

**MD389 Principles of Pharmacology**

**2 (2-0-4)**

General principles of Pharmacology and in-depth study of drug actions, emphasizing pharmacokinetics and pharmacodynamics, absorption, distribution, metabolism and excretion, action and receptor concepts, adverse drug reactions, drug interactions and principle of toxicology are focused.

**MD390 Systemic Pharmacology**

**4 (4-0-8)**

General principles of drug actions, physiological consequences of administration and principle of drug therapy are to be studied

**MD391 Experience in clinical nutrition**

**2 (2-0-4)**

Principles and methods in nutrition support. Case-based study in nutritional implementation for patients both in clinic and hospital wards. This study includes nutritional analysis, assessment, prescription and evaluation.

**MD392 Topographic anatomy**

**2 (2-0-4)**

Relationship of transverse sections of human structure i.e. head, neck, thorax, abdomen, pelvic, upper limbs and lower limbs with comparison to radiographs of the same sections.

**MD393 Common Parasitic Diseases in Thailand** **2 (2-0-4)**

Pre-requisite: Passing levels in MD 211 Introduction to Medical Sciences, MD 311 Hematology and Lymphoreticular System, MD 312 Infection and Immunology 1 and MD 313 Infection and Immunology 2

Common parasitic diseases and problems caused by the arthropods in Thailand including clinical manifestations, basic knowledge of host immune response, diagnosis, treatment, epidemiology, prevention and control of parasitic infection.

**MD 394 Applied Microbiology 1** **2 (2-0-4)**

Mechanisms of bacterial pathogenicity important in medical field, re-emerging and emerging bacterial pathogens; review of related and updated academic articles including microbiological laboratory testing which can be applied in disease diagnosis.

**MD 395 Medical Cell Biology** **2 (2-0-4)**

Basic fundamentals of cell biology applied to a medical context. Topics include structure and function of cell, signal transduction, cell-cell and cell-matrix interaction, cell motility, intracellular sorting, cellular homeostasis, cell division and cell cycle, structure and function of basic tissue components, intracellular accumulations, adaptive cell response to injury, mechanisms of cell injury and apoptosis as well as their clinical applications.

**MD 396 Research Experiences and Applications in Medicine** **2 (0-4-2)**

This subject includes research experiences and applications in medical sciences for clinical approaches including clinical laboratory diagnostic testing for infectious diseases, genetics disorder and epidemiology. Molecular tools are applied for the detection and diagnosis.

**MD 397 Molecular Medical Genetics** **2 (2-0-4)**

Pathogenesis of diseases that associate with control of gene expression, mutation, DNA repair and apoptosis. Application of techniques in molecular biology and genetic engineering in research and diagnosis. Definition, term, genome project and bioinformatics relating to the pathogenesis are included.

**MD 398 Molecular Biology in Medicine** 4 (4-0-8)

Basic knowledge on molecular biology, applications in medical sciences and clinical approaches, and basic techniques at molecular level for medical diagnosis and research.

**MD 399 Seminar on Journal Report** 2 (1-2-3)

Techniques for retrieval of scientific information from internet search engines, practice in journal paper search and presentation of interesting topics which provide new technology in research and medical approaches.

**MD 581 Medical Professional Experience 1** 4 (0-4-2)

Selective practice in a hospital in Thailand according to learner's interest, enhancing holistic health care, problem analysis and problem solving in medical and public health.

Study tour at related institution and field work training provided

**MD 582 Medical Professional Experience 2** 4 (0-4-2)

Selective practice in medical service institutions or other health centers that provide primary medical services and promote process of critical thinking, and problem solving of medical and public health in primary health care services.

Study tour at related institution and field work training provided

**MD 583 Learning Experience in Foreign Country** 4 (0-4-2)

Selective practice in a hospital or medical school abroad to compare medical service between Thailand and other countries.

**MD 584 Research Experience in Clinical Sciences** 4 (0-4-2)

Basic principles and clinical-research methodology, principle of epidemiology and biostatistics, research question and hypothesis, scientific-literature reviewing, research designing, sampling, measuring and information analysis, conclusion, writing and presentation, practice in small project to find cause of problem in routine medical service, for systematic problem solving.

**MD 585 Selective Clinical experience**

**4 (0-4-2)**

Selective experience in subject of interest, enhancement of special knowledge and skills in any department of medical schools and affiliated hospitals.

**MD 586 Rehabilitation Medicine**

**2 (1-2-3)**

Using physics energy and instrument for muscle and nerve rehabilitation; necessity of rehabilitation medicine in related treatment with other disciplines, patient preparation and referring for prosthesis including administration of rehabilitation medicine

Study tour at related institution and field work training provided

**MD 587 Medical Website**

**2 (1-2-3)**

Application of various sectors in innovation of computer, technology and communication to create website; collecting information, presentation and communicate medical information by modern technology.

Study tour at related institution and field work training provided

**MD 588 Principle Thai Traditional Medicine**

**4 (4-0-8)**

History and development of Thai traditional medicine; concept, theory and ethics of Thai traditional medicine; diagnosis, herbal treatment in term of food and drug, Thai traditional massage, sauna and massage with a bag of heated medicinal herb, various characteristics of health care; application of Thai traditional massage with public health services, problems and obstacles of various sectors in Thai traditional medicine conduction including determination of research to develop Thai traditional medicine.

Study tour at related institution and field work training provided

**MD 589 Clinical Pulmonary Medicine**

**2 (1-2-3)**

To learn about initial diagnosis, problem solving and long-term treatment of the chronic pulmonary diseases, and practice medical management of the chronic pulmonary diseases in the outpatient department, general medical ward and medical intensive care unit (ICU); Also, to learn about and practice skills in performing the basic pulmonary procedures, interpreting chest X-rays, and interpreting pulmonary laboratory results to help diagnose, manage and provide appropriate education to the patients and the patients' family about pulmonary diseases.

This subject requires participation inside and outside the Medicine Department.

**MD 590 Child and Adolescent Psychiatry**

**2 (1-2-3)**

Pre-requisite: Passing levels in MD 431, 432 Integrated Pediatrics 1, 2

Practice Child and Adolescent Psychiatric Medicine: To improve the ability to take a psychiatric history, do a mental status exam, formulate a biopsychosocial assessment, develop differential diagnoses, and formulate a treatment plan. To gain experience in the clinical management of common psychiatric disorders in children and adolescents and prepares them to provide general psychiatric care including crisis assessment and intervention, basic principles of behavior modification, psychopharmacology and psychotherapy, participation in clinical rounds, case conferences, seminars, and individual supervision.

**MD 591 Clinical Experiences in Specialty 1**

**2 (1-3-8)**

Selective clinical experience in interesting subject of medical specialty, enhancing special knowledge and skills in any department of medical schools and affiliated hospitals.

Study tour at related institution and field work training provided

**MD 592 Clinical Experiences in Specialty 2**

**2 (1-3-8)**

Selective clinical experience in subject of medical specialty or subspecialty which is of interest to the student, enhancement of special knowledge and skills in any of the various departments of medical schools or affiliated hospitals

Study tour at related institution and field work training provided

3.2 Faculty Members

3.2.1 Program Faculty Members

Number	Identification Number	Academic Rank	Name – Surname	Qualifications	Fields	Graduation	
						Institutes	Years
1.	3100503150xxx	Associate	Anucha	Diplomate of the	Infectious Internal	Medical Council	2003
		Professor	Apisarntharak	Thai Board	Medicine		
				Diplomate of the	Internal Medicine	Medical Council	2003
				Thai Board			
				Diplomate of the	Family Medicine	Medical Council	2003
				Thai Board			
				Cert.	Infectious Disease	Washington University School of Medicine	2002
				Diplomate	Internal Medicine	Diplomate American Board of Internal Medicine	2000
				M.D.	Medicine	Mahidol University	1995

Number	Identification Number	Academic Rank	Name – Surname	Qualifications	Fields	Graduation	
						Institutes	Years
2.	3120100486xxx	Associate Professor	Prakitpunthu Tomtitchong	Ph.D.	Molecular Biology	University of Leeds	2008
				MS.c.	Surgical Science	University of Leeds	2002
				Diplomate of the Thai Board	Surgery	Medical Council (Chiang Mai)	1994
				Diploma	Surgery	Chiang Mai University	1992
				M.D.	Medicine	Chiang Mai University	1991
3.	3510600024xxx	Assistant Professor	Peerapong Kitipawong	Diplomate of the Thai Board	Family Medicine	Medical Council	2003
				Certificate	Cardiology	University of Newcastle upon Tyne	1995
				M.D.	Medicine	Lyceum Northwestern,FQD- MF	1987
				B.Sc.	Pharmacy	Chiang Mai University	2525
4.	3100602012xxx	Assistant Professor	Supara Chaopricha	Diplomate of the Thai Board	Pediatric and Adolescent Psychiatry	Medical Council (CU)	2004
				Diploma	Psychiatry	Chulalongkorn University	2002

Number	Identification Number	Academic Rank	Name – Surname	Qualifications	Fields	Graduation	
						Institutes	Years
				M.D.	Medicine	Mahidol University (Ramathibodi)	1998
5.	3100502927xxx	Lecturer	Thana Khawcharoenporn	Diplomate of the Thai Board	Infectious Internal Medicine	Medical Council	2012
				Diplomate of the Thai Board	Internal Medicine	Medical Council	2012
				Diplomate	Infectious Disease	Diplomate American Board	2011
				M.Sc.	Clinical Research	Rush University	2011
				Diplomate	Internal Medicine	Diplomate American Board	2008
				M.D.	Medicine	Chulalongkorn University	2002

Numbers 1 – 3 are faculty members responsible for the Program.

### **3.2.2 Full-Time Faculty Members**

– See appendix 3.

### **3.2.3 Guest Lecturers and Scholars Teaching in the Program**

– See appendix 3.

## **4. Field Experience Components (if any)**

The Program provides learning through field experience so that the students have actual experience in Community Medicine and Family Medicine in the following courses and years of study.

- 1) Holistic Health Care 1 in the second year
- 2) Holistic Health Care 2 in the third year
- 3) Holistic Health Care 5 in the sixth year 6

### **4.1 Standard Learning Outcomes of Field Experience**

#### **4.1.1 Morals and Ethics**

4.1.1.1 Demonstration of the right morals and ethics for the profession

4.1.1.2 Demonstration of integrity toward self and the profession, leading to reliability for patients and the society

4.1.1.3 Demonstration of a personality that displays dependability and trustworthiness

4.1.1.4 Time punctuality and responsibility toward appointments

4.1.1.5 Respect for patients' rights by providing truth, confidentiality and bearing in mind the patients' interests and safety

4.1.1.6 Understanding and ability to provide human-centered healthcare

#### **4.1.2 Knowledge**

4.1.2.1 Social, human and behavioral principles necessary to build attitudes and understanding toward one's fellow human beings and society

4.1.2.2 Basic administrative principles related to public health

#### **4.1.3 Cognitive Skills**

4.1.3.1 Systematic thinking and analysis, using bodies of knowledge related to the profession and other aspects

4.1.3.2 Implementation of basic medical science-related and clinical information and evidence in citation and critical problem-solving

4.1.3.3 Selection of investigations, using basic instrumentation, special instrumentation and laboratory investigation based on their cost-effectiveness and suitability

4.1.3.4 Understanding of quality development significance as well as ability to perform regular and continuous quality development, ability to create bodies of knowledge from routine practice and understanding of the knowledge management system

#### **4.1.4 Interpersonal Skills and Responsibilities**

4.1.4.1 Professional adjustment and creative interpersonal relationships

4.1.4.2 Teamwork that is right for contexts and situations by taking the role of either a leader or a member in health system teams

4.1.4.3 Responsibilities, and participation in professional, organizational and social developments

4.1.4.4 Encouragement of participation of people and communities in healthcare, health promotion, disease prevention and disease control

#### **4.1.5 Numerical Analysis, Communication and Information Technology Skills**

4.1.5.1 Efficient communication in terms of speaking, listening, reading, writing, presentation and non-verbal communication

4.1.5.2 Obtaining consents for clinical management as well as assuring patients' confidentiality

4.1.5.3 Communicating skills in specific situations, in conveying bad news and in managing errors

4.1.5.4 Skills in listening to problems, understanding feelings and anxiety of patients and their relatives. as well as abilities to answer questions, explain, advise, suggest while appropriately open to participation

4.1.5.5 Recording on medical documents in a systematic, proper and continuous fashion based on universal standard guidelines

4.1.5.6 Skills in transferring knowledge, skills and experiences

#### **4.1.6 Psychomotor Skills**

4.1.6.1 Ability to notice gestures of patients and their relatives

4.1.6.2 Competence in comprehensive and appropriate history taking and physical examination of patients

4.1.6.3 Competence in investigation and interpretation with basic instrumentation and necessary laboratory investigations by taking cost-effectiveness and suitability into consideration

4.1.6.4 Skills in necessary health management and procedures

#### 4.2 Semesters and Years

First semester, the second year of study

Second semester, the third year of study

First and second semesters, the sixth year of study

#### 4.3 Time Allocation and Scheduling

The second- and third-year field experiences are to take place in communities, while the sixth-year experience will be in the form of hospital visits and practice. The learning experience is to be both during and outside official working hours.

### 5. Project or Thesis Requirement

#### 5.1 Brief Description of Task

This Program contains the following two compulsory elective courses in the research category in both preclinical and clinical levels.

MD 388 Research Experience in Medical Sciences 4 (0-4-20)

MD 584 Research experience in Clinical Sciences 4 (0-4-20)

#### 5.2 Standard Learning Outcomes

##### 5.2.1 Knowledge

5.2.1.1 Principles of epidemiology, clinical epidemiology, biostatistics, medical information and evidence-based medicine

##### 5.2.2 Cognitive Skills

5.2.2.1 Awareness of the potential to determine the needs for one's own learning and development by covering all necessary aspects

5.2.2.2 Creativity, ability to plan and seek ways to build and develop the appropriate knowledge, skills, attitudes and behaviors

5.2.2.3 Analytical thinking systematically, using the professional knowledge and the related knowledge of other subject areas

5.2.2.4 Ability to implement information and evidence for both the basic and clinical medical sciences in referencing and critical troubleshooting

5.2.2.5 Ability to seek and exchange knowledge, to be trained in skills as well as the continuous and consistent self-improvement

### **5.2.3 Numerical Analysis, Communication and Information Technology Skills**

5.2.3.1 Ability to research data from various sources by using information technology as well as judgment in appraising and selecting the information with the principles of epidemiology, clinical epidemiology and evidence-based medicine

5.2.3.2 Information skills with critical thinking and ability to transform the data into quality information as well as to read, analyze and relay the information for the understanding of other people

5.2.3.3 Selection and employment of formats for presenting the information as well as the use of information technology and communications efficiently and situation-appropriately

### **5.3 Scheduling**

Second semester, the third year of study

Second semester, the fifth year of study

### **5.4 Number of Credits**

Four credits per course

### **5.5 Preparation**

These compulsory elective courses in the research category provide teachers as research consultants, who are responsible for learning management and student assistance. In addition, the Faculty has prepared laboratory facilities, chemicals and resources in support of research to students.

### **5.6 Evaluation Process**

Assessments are performed by the evaluation of projects that have been assigned or of presentations.

A verification of the scoring suitability is in place.

## **6. Requirements of Medicine Comprehensive Examination**

There are two phases of the Medicine Comprehensive Examination. Students are required to obtain passing levels in both.

### **6.1 Medicine Comprehensive Examination 1: Basic medical science**

Students who have completed all major second- and third-year courses according to the study plan are entitled to take the Medicine Comprehensive Examination 1.

6.2 Medicine Comprehensive Examination 2: Clinical medical science

Students who have completed all major fourth- and fifth-year courses according to the study plan are entitled to take the Medicine Comprehensive Examination 2

6.3 The Faculty may arrange to schedule each phase of the Medicine Comprehensive Examination at least once, but no more than three, times per year.

Section 4 Learning Outcomes, Teaching and Evaluation Strategies

1. Development of Students' Special Characteristics

Special Characteristics	Strategies or Students' Activities
<p>Knowledge coupled with morals</p>	<ol style="list-style-type: none"> <li>1. Development of learners' potentials and learning methods by scheduling Introduction to Medical Education course in the second year of study to prepare the learners so that they understand the Program's objectives, PBL method and learning skills.</li> <li>2. The Program and all courses emphasize cognitive skills aspect of standard learning outcomes by requiring learners to set their learning requirements and to plan as well as to seek the knowledge and skills for their life-long continuous development. The eagerness to learn is also one of this Program's desired medical graduate characteristics.</li> <li>3. All courses set aside time for students to conduct self-directed learning.</li> <li>4. Arrangement of the supervision system so that learners get to meet expertised instructors.</li> <li>5. All courses incorporate and grow in students the professional morals and ethics.</li> <li>6. Arrangement for continuous courses on ethics, medical ethics and humanistic medicine in every year of study from the first to the fifth years.</li> </ol>

2. Development of Learning Outcomes in Domains of Learning

2.1 Morals and Ethics

1) Morals and Ethics to Be Developed

- 1) Demonstration of the right morals and ethics for the profession
- 2) Demonstration of integrity toward self and the profession, leading to reliability for patients and the society
- 3) Demonstration of a personality that displays dependability and trustworthiness
- 4) Time punctuality and responsibility toward appointments
- 5) Responsibility toward patients and assigned tasks

- 6) Understanding of needs and limitations without discrimination in the context of race, religion, culture, gender, age or financial status
- 7) Respect for patients' rights by providing truth, confidentiality and bearing in mind the patients' interests and safety
- 8) Understanding and ability to provide human-centered healthcare

## **2) Teaching Strategies**

Incorporation of professional morals and ethics and the awareness of patients' rights and human dignity. Teaching strategies or methods include:

- 1) Analysis of ethical dilemma
- 2) Group discussions
- 3) Practice in simulated situations
- 4) Role models
- 5) Case studies

## **3) Evaluation Strategies**

- 1) Evaluation based on the analysis
- 2) Evaluation based on the behavioral observation
- 3) Self-assessment
- 4) Peer assessment
- 5) Evaluation of assigned tasks

## **2.2 Knowledge**

### **1) Knowledge to Be Acquired**

- 1) Basic medical science (in pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 1 Kor)
- 2) Professional competencies and clinical skills (in pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 2 Khor)
- 3) Health and health promotion (in pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 3 Khor)
- 4) Medical ethics (in pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 4 Ngor)
- 5) The medical profession-related law (in pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 5 Jor)

- 6) Rational use of drugs, health products and health technology
- 7) Principles of epidemiology, clinical epidemiology, biostatistics, medical information and evidence-based medicine
- 8) Social, human and behavioral principles necessary to build attitudes and understanding toward one's fellow human beings and society
- 9) Basic administrative principles related to public health
- 10) Fundamental principles of patients' safety and quality system

## **2) Teaching Strategies**

Student-centered learning with various methods but corresponding to objectives and learning outcomes. Emphasis is placed on practice in actual situations, particularly in clinical years of study, such as:

- 1) Lectures
- 2) Group discussions
- 3) Self-directed learning
- 4) Bedside teaching
- 5) Individual task assignments

## **3) Evaluation Strategies**

- 1) Multiple-choice examinations
- 2) Modified subjective examinations
- 3) Practical examinations
- 4) Evaluation of the assigned tasks

## **2.3 Cognitive Skills**

### **1) Cognitive Skills to Be Developed**

1) Awareness of the potential to determine the needs for one's own learning and development by covering all necessary aspects

2) Creativity, ability to plan and seek ways to build and develop the appropriate knowledge, skills, attitudes and behaviors

3) Analytical thinking systematically, using professional knowledge and related knowledge in other subject areas

4) Ability to implement information and evidence for both the basic and clinical medical sciences in referencing and critical troubleshooting

5) Ability to seek and exchange knowledge, to be trained in skills as well as continuous and consistent self improvement

6) Efficient selection of problem-solving methods corresponding to the changing health situations and contexts

7) Selection of investigations, using basic instrumentation, special instrumentation and laboratory investigation based on their cost-effectiveness and suitability

8) Understanding of roles, benefits and directions of the integration of Thai traditional medicine and alternative medicine in the country's health system for an appropriate use of guidelines or patient referral

9) Understanding of the significance of quality development as well as ability to perform regular and continuous quality development, ability to create bodies of knowledge from routine practice and understanding of the knowledge management system

10) Ability to apply the knowledge of esthetics, life and death, cultures, societies, law, economics and community environment to connect with efficient and effective healthcare

## **2) Teaching Strategies**

- 1) Group discussions
- 2) Self-directed learning
- 3) Laboratory study
- 4) Projects
- 5) Practice in simulated situations
- 6) Clinical practice
- 7) Community experience

## **3) Evaluation Strategies**

- 1) Multiple-choice examinations
- 2) Modified subjective examinations
- 3) Practical examinations
- 4) Evaluation based on the analysis
- 5) Evaluation based on the observation of activity participation
- 6) Evaluation of the assigned tasks

## 2.4 Interpersonal Skills and Responsibilities

### 1) Interpersonal Skills and Responsibilities to Be Developed

- 1) Professional adjustment and creative interpersonal relationships
- 2) Teamwork that is right for contexts and situations by taking a role of either a leader or a member in health system teams
- 3) Responsibilities, and participation in professional, organizational and social developments
- 4) Encouragement of participation of people and communities in healthcare, health promotion, disease prevention and disease control

### 2) Teaching Strategies

- 1) Small group learning
- 2) Clinical practice
- 3) Community experience
- 4) Role models

### 3) Evaluation Strategies

- 1) Behavioral observation
- 2) Self-assessment
- 3) Peer assessment
- 4) Evaluation of the assigned tasks

## 2.5 Numerical Analysis, Communication and Information Technology Skills

### 1) Numerical Analysis, Communication and Information Technology Skills to Be Developed

- 1) Application of logics, mathematics and medical statistics
- 2) Efficient communication in terms of speaking, listening, reading, writing, presentation and non-verbal communication
- 3) Obtaining consent for clinical management as well as assuring patients' confidentiality
- 4) Communicating skills in specific situations, in conveying bad news and in managing errors

5) Skills in listening to problems, understanding feelings and anxiety of patients and their relatives, as well as abilities to answer questions, explain, advise and suggest while appropriately open to participation

6) Ability to research data from various sources by using information technology as well as judgment in appraising and selecting the information with the principles of epidemiology, clinical epidemiology and evidence-based medicine

7) Information skills with critical thinking and ability to transform the data into quality information as well as to read, analyze and relay the information for the understanding of other people

8) Selection and employment of formats for presenting the information as well as the use of information technology and communications efficiently and situation-appropriately

9) Recording on medical documents in a systematic, proper and continuous fashion as based on universal standard guidelines

10) Skills in transferring knowledge, skills and experiences

## **2) Teaching Strategies**

1) Self-directed learning

2) Projects

3) Practice in simulated situations

4) Clinical practice

5) Search and presentations, using information technology

## **3) Evaluation Strategies**

1) Practical examinations

2) Observation of activity participation

3) Evaluation of the assigned tasks

4) Presentations

## **2.6 Psychomotor Skills**

### **1) Psychomotor Skills to Be Acquired**

1) Ability to notice gestures of patients and their relatives

2) Competence in comprehensive and appropriate history taking and physical examination of patients

3) Competence in investigation and interpretation with basic instrumentation and necessary laboratory investigations by taking cost-effectiveness and suitability into consideration

4) Skills in necessary health management and procedures (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 2 Khor, Category 3)

**2) Teaching Strategies**

- 1) Clinical practice
- 2) Simulated situations

**3) Evaluation Strategies**

- 1) Practical examinations
- 2) Behavioral observation
- 3) Clinical practice evaluation

**3. Curriculum Mapping Illustrating the Distribution of Program Standard Learning Outcomes to Course Level**

The six standard learning outcomes specified in the table have the following meanings.

**1. Morals and Ethics**

- 1.1 Demonstration of the right morals and ethics for the profession
- 1.2 Demonstration of integrity toward self and the profession, leading to reliability for patients and the society
- 1.3 Demonstration of a personality that displays dependability and trustworthiness
- 1.4 Time punctuality and responsibility toward appointments
- 1.5 Responsibility toward patients and assigned tasks
- 1.6 Understanding of needs and limitations without discrimination in the context of race, religion, culture, gender, age or financial status
- 1.7 Respect for patients' rights by providing truth, confidentiality and bearing in mind the patients' interests and safety
- 1.8 Understanding and ability to provide human-centered healthcare

**2. Knowledge**

Having knowledge in the following aspects

- 2.1 Basic medical science (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 1 Kor)

2.2 Professional competencies and clinical skills (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 2 Khor)

2.3 Health and health promotion (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 3 Khor)

2.4 Medical ethics (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 4 Ngor)

2.5 The medical profession-related law (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 5 Jor)

2.6 Rational use of drugs, health products and health technology

2.7 Principles of epidemiology, clinical epidemiology, biostatistics, medical information and evidence-based medicine

2.8 Social, humanity and behavioral principles necessary to build attitudes and understanding toward one's fellow human beings and the society

2.9 Basic administrative principles related to public health

2.10 Fundamental principles of patients' safety and quality system

### **3. Cognitive Skills**

3.1 Awareness of the potential to determine the needs for one's own learning and development by covering all necessary aspects

3.2 Creativity, ability to plan and seek ways to build and develop the appropriate knowledge, skills, attitudes and behaviors

3.3 Analytical thinking systematically, using the professional knowledge and the related knowledge in other subject areas

3.4 Ability to implement information and evidence for both the basic and clinical medical sciences in referencing and critical troubleshooting

3.5 Ability to seek and exchange knowledge, to be trained in skills as well as the continuous and consistent self-improvement

3.6 Efficient selection of problem-solving methods corresponding to changing health situations and contexts

3.7 Selection of investigations, using basic instrumentation, special instrumentation and laboratory investigation based on their cost-effectiveness and suitability

3.8 Understanding of roles, benefits and directions of the integration of Thai traditional medicine and alternative medicine in the country's health system for an appropriate use of guidelines or patient referral

3.9 Understanding of quality development significance as well as ability to perform regular and continuous quality development, ability to create bodies of knowledge from routine practice and understanding of the knowledge management system

3.10 Ability to apply the knowledge on esthetics, life and death, cultures, societies, law, economy and community environment to connect with the efficient and effective healthcare

#### **4. Interpersonal Skills and Responsibilities**

4.1 Professional adjustment and creative interpersonal relationships

4.2 Teamwork that is right for contexts and situations by taking a role of either a leader or a member in health system teams

4.3 Responsibilities, and participation in professional, organizational and social developments

4.4 Encouragement of participation of people and communities in healthcare, health promotion, disease prevention and disease control

#### **5. Numerical Analysis, Communication and Information Technology Skills**

5.1 Application of logics, mathematics and medical statistics

5.2 Efficient communication in terms of speaking, listening, reading, writing, presentation and non-verbal communication

5.3 Obtaining consents for clinical management as well as assuring patients' confidentiality

5.4 Communicating skills in specific situations, in conveying bad news and in managing errors

5.5 Skills in listening to problems, understanding feelings and anxiety of patients and their relatives as well as abilities to answer questions, explain, advise and suggest while appropriately open to participation

5.6 Ability to research data from various sources by using information technology, as well as judgment in appraising and selecting the information with the principles of epidemiology, clinical epidemiology and evidence-based medicine

5.7 Information skills with critical thinking and abilities to transform the data into quality information, as well as to read, analyze and relay the information for the understanding of other people

5.8 Selection and employment of formats for presenting the information, as well as the use of information technology and communications efficiently and in a manner appropriate to a situation

5.9 Recording on medical documents in a systematic, proper and continuous fashion based on universal standard guidelines

5.10 Skills in transferring knowledge, skills and experiences

## **6. Psychomotor Skills**

6.1 Ability to notice gestures of patients and their relatives

6.2 Competence in comprehensive and appropriate history taking and physical examination of patients

6.3 Competence in investigation and interpretation with basic instrumentation and necessary laboratory investigations by taking cost-effectiveness and suitability into consideration

6.4 Skills in necessary medical care and procedures (pursuant to the Medical Competency Assessment Criteria for National License 2012 Part 2 Khor, Category 3)





Curriculum Mapping Illustrating the Distribution of Program Standard Learning Outcomes to Course Level

● Major responsibility    ○ Minor responsibility

Course	1. Morals and Ethics								2. Knowledge										3. Cognitive Skills										4. Interpersonal Skills and Responsibilities				5. Numerical Analysis, Communication and Information Technology Skills										6. Psychomotor Skills					
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	4.1	4.2	4.3	4.4	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10	6.1	6.2	6.3	6.4		
MD 214 Alimentary System and Nutrition				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 215 Genitourinary System				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 216 Nervous System, Brain and Behavior				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 251 Holistic Health Care 1	○	●	○	●	○	●	●	●	●	○	●	○	○	○	○	○	○	○	●	●	○	●	●	●	○	○	○	●	●	●	●	●	●	○	●	○	●	●	●	●	●	○	●					
MD 300 Humanistic Medicine 2	○	○	○	○	○	○	○	●			○	○	○			●	○	○	○	○	○							●			○	○	○	○	○		●	○							○			
MD 311 Hematology and Lymphoreticular System				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				●
MD 312 Infection and Immunology 1				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				●
MD 313 Infection and Immunology 2				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				●
MD 314 Endocrine System				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 315 The Cycle of Life				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 316 Application of Medical Sciences				○					●	○				●	○				○	○	○	○	○	○	○	●					○	○	○	○	○	○			○	○	○	○	○	○				○
MD 351 Holistic Health Care 2	○	○	○	●	○	●	●	●	○	○	●	○	○	○	○	○	○	○	●	●	○	●	●	●	○	○	○	●	●	●	●	●	●	●	●	○	●	●	●	●	●	○	●					
MD 352 Biostatistics and Epidemiology				○					●	●	○			○	●	○	○	○	○	○	●	●	●	○	○			○		○	●	○	○	●	○			●	●	●	○	○					○	
MD 400 Medical Law and Ethics 1	●	●	●	●	●	●	●	●				●	●			○	○	○	○		○							●	●	●	●	●		●		○		●	○					○	○			
MD 401 Introduction to Clinic	●	●	●	●	●	●	●	●	○	●	○	●	○	○	○	○	○	○	●	●	●	●	●	●	●	○	○			●	●	●	●	○	●	○	○	○	●	●	●	●	○	○	○	○	○	
MD 411 Integrated Internal Medicine 1	●	●	●	●	●	●	●	●	○	●	○	●	○	○	●	○		○	●	●	●	●	●	●	●			○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○					
MD 412 Integrated Internal Medicine 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○		●	●	●	●	○	●	○	○	○	●	●	●	●	○	●	●	●	●	
MD 421 Integrated Surgery 1	●	●	●	●	●	●	●	●	○	●	○	●	○	○	●	○		○	●	●	●	●	●	●	●			○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○					
MD 422 Integrated Surgery 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○	●	●	●	●	
MD 431 Integrated Pediatrics 1	●	●	●	●	●	●	●	●	○	●	○	●	○	○	●	○		○	●	●	●	●	●	●	●			○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○					
MD 432 Integrated Pediatrics 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○	●	●	●	●	

Curriculum Mapping Illustrating the Distribution of Program Standard Learning Outcomes to Course Level

● Major responsibility    ○ Minor responsibility

Course	1. Morals and Ethics								2. Knowledge										3. Cognitive Skills										4. Interpersonal Skills and Responsibilities				5. Numerical Analysis, Communication and Information Technology Skills										6. Psychomotor Skills						
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	4.1	4.2	4.3	4.4	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.10	6.1	6.2	6.3	6.4			
MD 441 Integrated Obstetrics-Gynecology 1	●	●	●	●	●	●	●	●	○	●	○	●	○	○	●	○		●	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○						
MD 442 Integrated Obstetrics-Gynecology 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○													○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○	●	●	●	●
MD 451 Holistic Health Care 3	●	●	○	●	○	●	●	●	○	○	●	●	○	○	●	●	●	○	●	●	●	●	●	●	○	○		○	○	●	●	●	○	○	●	○	●	●	●	●	○	●	○	○	○	○			
MD 500 Medical Law and Ethics 2	●	●	●	●	●	●	●	●				●	●			○	○	○	○		○									●	●	●			●	○								○	○				
MD 501 Selective Specialty Care	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○			●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	○	○	○	○				
MD 511 Integrated Internal Medicine 3	●	●	●	●	●	●	●	●	○	●	○	●	○	○	●	○		●	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○							
MD 512 Integrated Internal Medicine 4	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	●	○	●	●	●	●	
MD 521 Integrated Surgery 3	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○							
MD 522 Integrated Surgery 4	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●				
MD 531 Integrated Pediatrics 3	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○							
MD 532 Integrated Pediatrics 4	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●		
MD 541 Integrated Obstetrics-Gynecology 3	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	●	●		○	○	●	●	●	●	○	●	○	○	○	●	●	●	○							
MD 542 Integrated Obstetrics-Gynecology 4	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●		
MD 551 Holistic Health Care 4	●	●	○	●	●	●	●	●	○	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●		○	○	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	○				
MD 561 Forensic Medicine	●	●	●	●	●	●	●	●		●		●	●			○	○	○	○	○	○	○	○	○	○				●	●	○		○	○	○	○	○	○	○	○	○		○						
MD 611 Practical Internal Medicine 1	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	●	●	●	●	●	○									
MD 612 Practical Internal Medicine 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●		
MD 621 Practical Surgery 1	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	●	●	●	●	○	●									
MD 622 Practical Surgery 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●		
MD 631 Practical Pediatrics 1	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	●	●	●	○	●										
MD 632 Practical Pediatrics 2	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○		○												○	○	●	●	●	●	○	●	○	○	○	●	●	●	○	●	●	●	●		
MD 641 Practical Obstetrics-Gynecology 1	●	●	●	●	●	●	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	●	●	●	○	●										





## Section 5 Student Evaluation Criteria

### 1. Regulation and Criteria for Allocation and Distribution of Grades

1.1 The evaluation is in pursuant to Articles 12, 13 and 14 of Thammasat University Regulations on Undergraduate Education 1997 (with amendments) and to Thammasat University Regulations on Doctor of Medicine Degree Level 2009.

1.2 Eight letter grades are used to show the academic standing of all students with the following point values per credit.

Grade	A	B+	B	C+	C	D+	D	F
Point value	4.00	3.50	3.00	2.50	2.00	1.50	1.00	0.00

1.3 Student attending phase-2 and phase-3 courses and having a cumulative grade point average below 2.00 can re-register in those phase-2 and phase-3 courses, from which he/she obtained grade C or lower.

1.4 The academic standing after each Medicine Comprehensive Examination is either S (satisfactory) or U (unsatisfactory).

1.5 Grade allocation criteria and make-up examination criteria are in pursuant to the Faculty's notifications.

### 2. Verification Process of Student Achievements

#### 2.1 Verification of Student Achievements While Studying

2.1.1 Course sub-committees check scoring results against examination papers, reports and other assigned tasks prior to bringing them to the attention of the Faculty's evaluation sub-committee.

2.2.2 The Faculty's evaluation sub-committee, comprising at least scholars in medical education, verifies the scoring results against examination papers, reports and other assigned tasks prior to reporting to the Program administration committee every semester.

2.2.3 The Faculty committee is responsible for verifying the achievements and the standard learning outcomes every academic year.

## 2.2 Verification of Student Achievements after Graduation

2.2.1 Monitoring and evaluating graduates' quality and career achievements as information for further improving the Program. These are done through verifications by the graduates, graduate users and external scholars.

2.2.2 Gathering the graduates' information, performances and-or activities that have been beneficial to society or honors/awards

## 3. Graduation Requirements

3.1 Students have completed courses required by the Program structure and have not less than 258 cumulative credits.

3.2 Have obtained a cumulative grade point average of at least 2.00 (in the 4-grade system)

3.3 Have obtained S (satisfactory) in Medicine Comprehensive Examination 1 and Medicine Comprehensive Examination 2

3.4 Have complied with other conditions as determined by the Faculty and Thammasat University

3.5 Students who have acquired no fewer than 128 credits in the Doctor of Medicine Program and do not wish to continue for the Doctor of Medicine Degree will obtain the Bachelor of Science Degree in the Medical Science field

## Section 6 Faculty Member Development

### 1. Preparation of New Faculty Members

1) Organizing faculty- and university-level orientations to familiarize new faculty members with the following items.

- Policies of Thammasat University and Faculty of Medicine
- The faculty members' roles and responsibilities according to the missions
- Regulations as well as the faculty members' benefits

2) All new faculty members must be developed as regards teaching and learning, English language proficiency, researching, morals and ethics, serving as advisors and educational quality assurance.

### 2. Knowledge and Skills Development for Faculty Members

#### 2.1 Teaching, Assessment and Evaluation Skills Development

1) Training for the knowledge and understanding of faculty members as regards the following basic medical education issues

- Program development
- Lesson planning
- Teaching and learning management; teaching methods, particularly the student-centered teaching
- Assessments and evaluations
- Utilization of educational technology and innovations such as e-learning, teaching media production
- English usage

2) Training with the purpose that the faculty members will do researches to develop their knowledge, learning and teaching. Promotion of research publications as well as giving incentives to those with academic publications.

3) Organizing workshops to develop the learning and teaching and the evaluation

#### 2.2 Academic and Professional Development

- Supporting the faculty members' continuing education for higher academic qualifications

- Supporting the faculty members' professional and academic training, conferences or seminars
- Supporting the faculty members' academic publications for higher academic ranks
- Supporting the faculty members' research, including research being performed in their professional fields, and giving incentives to those with academic publications
- Supporting the faculty members' participation in academic services for society

## Section 7 Program Quality Assurance

### 1. Program Management

- 1.1 The Faculty announces policies and practices in the management of teaching, learning, assessment and guidelines for graduates' quality assurance.
- 1.2 A committee is appointed to manage the Doctor of Medicine Program (English Program) to plan, supervise, advise and guide the faculty members who are responsible for the program, the evaluation sub-committee and course sub-committees so that the educational management is efficient and achieves its objectives.
- 1.3 The course sub-committees coordinate with departments in the management of teaching, learning and assessment according to both Program and course details, for which they are responsible, as well as evaluate the teaching and learning, and make improvements.
- 1.4 The evaluation sub-committee is responsible for overseeing the evaluation and making decisions as regards examination results of each course, each Medicine Comprehensive Examination and each make-up examination, and presenting the results to the Program Committee.
- 1.5 Faculty members responsible for the Program in cooperation with course sub-committees and faculty members track and collect data for use in seminars to review, update and develop the Program at the end of each academic year.
- 1.6 There is a central unit of the Faculty that is responsible for educational support in all aspects, such as teaching, learning and teaching management, resource management, learner evaluation, learning and teaching evaluation, quality assurance, etc.

Goal	Procedure	Evaluation
1. Standard and up-to-date program	1. Appoint a program development committee to ensure that the Program meets standards of the standard framework of Bachelor's degree qualification in medicine and the Medical Council's Medical Professionals Competencies Criterion 2012	1. The Faculty' Program obtained approvals of University Council, Medical Council and MUA.

Goal	Procedure	Evaluation
2. Full course details as required by criteria	2. The course sub-committees produce TQF 3 & 4 by the collaboration with the Doctor of Medicine Program Committee and in conformity to the Medical Council's Medical Professionals Competencies Criterion and Medical Competency Assessment Criteria for National License 2012.	2. Sufficient TQF 3 and 4 as required by the criteria
3. Medical graduates possess characteristics as desired by the Program.	3.1 Committees of all levels, faculty members and those involved operate according to the duties and responsibilities while aiming for the highest quality the desired characteristics of medical graduates. 3.2 Evaluation of graduates	3.1 The number of people who have received a Bachelor of Medicine degree and a medical professional license 3.2 Evaluation results of graduates
4. The standard the Program is evaluated on a regular basis.	4.1 Conduct quality assurance process and use the results in the continuous development of the educational management. 4.2 Evaluate the Program at a determined interval of 5-6 years.	4.1 The result of quality assurance evaluation is at the level of 'good' or higher. 4.2 Results of the Program evaluation are used in the development and the improvement of next versions of the Program.

## 2. Teaching and Learning Resource Management

### 2.1 Budget Management

The Faculty allocates budgets from both public and income accounts to secure textbooks, instructional media, electronic databases for learning and teaching, computers and information media, manikins and educational materials, etc.

In addition, the Faculty allocates budgets to develop faculty members and support staff in the forms of both continuing education and domestic and international conferences.

### 2.2 Existing Teaching and Learning Resources

1) Nongyao Chaiseri Library provides books, textbooks and journals related to the learning and teaching in the health science field as well as a computer center for the Internet service.

Specific information resources at Nongyao Chaiseri Library:

<u>Books</u>	As of January 2012:		
Thai-language:	24,318	books	
Foreign-language:	24,391	books	
	Total	48,709	books
<u>Journals</u>	Year 2012:		
Thai-language:	150	journals (approximately)	
Foreign-language *:	153	journals	
	Total	303	journals

\* ประมาณเฉพาะที่จ่ายเงินบอกรับตัวเล่ม (Printed version +online/online only 1 title)

**E-Resources / Online Databases** <http://library.tu.ac.th> or <http://search.library.tu.ac.th>

List of health science databases:

1. .Annual Review: An online database of English-language annual books, providing full-text books of 32 titles by Annual Reviews Publisher in biomedical sciences, physical sciences and social sciences

2. The Cochrane Library: An evidence-based medicine database and systematic analyses to support practice and medical research

3.CINAHL Plus with Full Text : A database of journal index and full-text journals in nursing and allied health sciences

4. McGraw-Hill's "Access Medicine": An electronic book and multimedia database in basic sciences, health science and all specializations of medicine with information supporting the medical services and practice

5. McGraw-Hill's "AccessSurgery": An electronic book and multimedia database in surgery and medicine with information supporting the medical services and practice

6. MD Consult Core Collection: A medical integrated database, compiling journals and textbooks in several specializations of medicine

7. Nature (journal in Nature Publishing Group): Provides the information that covers eight scientific and medical journals, namely Nature Biotechnology, Nature Cell Biology, Nature Genetics, Nature Immunology, Nature Materials, Nature Medicine, Nature Neuroscience and Nature Structural and Molecular Biology

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8. OVID: An online journal database from more than 50 publishers and medical science associations such as Lippincott Williams & Wilkins, Taylor & Francis. This database has compiled databases on scientific, technological and medical bibliographies. In the year 2012, Thammasat University libraries also subscribed to Total Access (over 240 titles).

9. Oxford Journals: An electronic journals by Oxford University Press, offering approximately 180 journals that cover life science, mathematics, physics, medicine, social sciences, humanities and law. Articles from the year 1996 to present can be retrieved.

10. SAGE Journals Online: Covers contents in humanities, social sciences, science, technology and medicine. Journals from the year 1999 to present can be searched. All journals are full-text and accessible through the same platform under HighWire Press.

11. ScienceDirect: Covers scientific and medical articles from over 1,800 journals by Elsevier Science, Academic Press and other publishers as well as over 6.2 million review articles, of which full texts are accessible for the year 1995 to present.

12. Thieme Electronic Book Library: An atlas database in science and various medical science fields by Thieme.

13. UpToDate Answer: Directly on the spot for internal medicine including 14 subspecialties, obstetrics & gynecology, and pediatrics. Completely updated with providing new search/what's new/drug interaction/drug database/patient information/graphics.

14. Web of Science: A bibliography and excerpt database with references and citations that cover major fields, including science, social sciences and humanities from approximately 9,200 journals from the year 2001 to present

15. Wiley Online Library: Covers electronic journals in medicine, health science, engineering, computer and technology, business, economics, finance, accounting, social and behavioral sciences, humanities, arts and law.

2) Academic Service Center of the Faculty of Medicine has a skill lab equipped with model manikins, microscopes and computers for the Internet service.

3) An SDL room is located at the student club and another one at Thammasat University Hospital dormitory. The Internet service is provided.

4) One hundred and seventy-seven computers are allocated for students to use in information searching; that is, 4.91 students per one computer. Computers are allocated for the performance of faculty members and support staff at the ratio of 1:1. There are 787 Internet connection points, 36 of which are wireless, in Kunakorn Building and Thammasat University Hospital dormitory areas.

5) As for research technology, equipment and facilities, the Faculty of Medicine has 30 laboratories at its Research Center to promote, develop and support the research of all divisions, including the Faculty's Graduate Studies.

### **2.3 Provision of Additional Teaching and Learning Resources**

- 1) The Board plans the provision and monitoring of the Faculty's teaching and learning resource utilization.
- 2) Departments and the student committee propose a list of textbooks, books, and learning and teaching media to the Faculty Board and the University's libraries.
- 3) The Faculty allocates budgets as deemed appropriate.
- 4) Rooms are provided for students to conduct self-study at any time at both the Faculty and the dormitory, with books, computers, Internet and media.

## 2.4 Assessment of Sufficiency of Teaching and Learning Resources

The Faculty arranges for the monitoring and the evaluation of students and faculty members' usage and satisfaction toward the learning and teaching resources and for the use of the evaluation results in improving the resources.

Goal	Procedure	Evaluation
1. Sufficient textbooks, journals and learning media	1. Libraries survey the sufficiency and the satisfaction toward the resources on the library part. 2. Course sub-committees and the Faculty surveys faculty members' and students' satisfaction toward learning and teaching resources. 3. The students and the faculty members propose their demands for resources to the Faculty or libraries.	1. Survey results of the satisfaction toward textbooks, journals and learning media
2. Sufficient classrooms, laboratories, clinical skill labs and self-study facilities	4. The Faculty plans, manages and surveys the satisfaction toward the preparedness of learning facilities.	2. Survey results of the satisfaction toward the learning and teaching facilities
3. A computer network system and an efficient Internet service	5. The Faculty arranges for a network system, computers, information technology resources and an efficient Internet service to sufficiently and efficiently serve its students and personnel.	3. Survey results of the satisfaction toward the network system and the Internet service

## 3. Faculty Member Management

### 3.1 Recruitment of New Faculty Members

The process of recruiting new faculty members is in pursuant to the University's and the Faculty's criteria.

- 1) Determination of a faculty member's qualifications according to professional standards, taking academic qualifications into consideration
- 2) Call for qualified applicants
- 3) Fair search of the applicants' history and qualifications from reliable sources of information
- 4) Personality test, using a standard test
- 5) Appointment of an interview committee
- 6) Nomination of passed applicants to the University for consideration and screening prior to presenting at a University Board meeting for decision-making

### **3.2 Faculty Members' Participation in Program Planning, Monitoring and Reviewing**

1) Instructors evaluate learners and, in collaboration with course sub-committees, evaluate the learning and teaching management at the end of each course. Results of the evaluation are presented at Department meetings for consideration.

2) Instructors, course sub-committees and faculty members responsible for the Program join in a seminar on the Program and the learning and teaching management at the end of each academic year to revise and plan for the Program improvement in the next year.

### **3.3 Appointment of Part-time Faculty Members**

1) The appointment of part-time faculty members can be done only for teaching specialized subjects where no full-time faculty members are capable of teaching or there are insufficient full-time faculty members.

2) Course sub-committee chairpersons propose the demand for the appointment to the Vice Dean for Academic Affairs for consideration and screening prior to presenting to the Dean for the appointment pursuant to the University regulation.

3) The ratio of part-time faculty members to the Program instructors is not set and is to be considered according to each Division's insufficiency.

## **4. Support Staff Management**

### **4.1 Qualifications**

The determination of qualifications for specific positions is as required by the Faculty and in pursuant to the University regulation. Positions with critical responsibilities or requiring specific

capabilities must only be given to those with at least a Bachelor's degree who can communicate in English well.

#### **4.2 Enhancement of Knowledge and Skills**

1) The Faculty makes development planning for the support staff in various areas through the budget support.

2) Providing trainings, visits and learning exchange in order to increase knowledge and experience.

3) The Faculty grants scholarships for graduate courses or programs that are beneficial to the Faculty.

## **5. Student Support and Advising**

### **5.1 Academic Advice and Counseling**

1) Providing orientation for new students to introduce the Program and living in the University

2) Program of conferring gowns upon students for guidance in their study and conduct in classes at the clinical level.

3) Appointing an advisor for each student for guidance in both academics and other aspects of student life as well

4) For students who have learning problems or other problems, in addition to consulting with their advisors, they can make a consultation appointment with the Vice Dean for Academic Affairs and the Vice Dean for Student Affairs.

5) Providing a psychotherapy clinic for students with mental health problems

6) Managing projects introducing the sixth-year medical students to the practice during scholarship recompensation and the professional practice

7) Organizing the final supervising event for medical students in their last year of study prior to graduation

### **5.2 Student Appeals**

1) If students have concerns about evaluations in any course, they can submit a request to see their score and how faculty members have evaluated each course by filing a request at the education services.

2) The student's appeal is to be submitted according to Section 4 of Thammasat University Regulations on Student Discipline 2004.

## **6. Labor Market Needs, Social Needs and/or Employer Satisfaction**

1) The graduates' employment or further education is at the rate of 100%.

2) Graduates' employer satisfaction toward the graduates' overall quality must be at a level greater than 3.51 out of 5.0 points.

## 7. Key Performance Indicators

Performance Indicator	The First Year	The Second Year	The Third Year	The Fourth Year	The Fifth Year	The Sixth Year	The Seventh Year
1) At least 80% of full-time faculty members are involved in the planning, following up and reviewing of the program performance.	✓	✓	✓	✓	✓	✓	✓
2) The Program Specification (TQF 2 Form) in accordance with the Thai Qualification Frameworks for Higher Education or the Standard of Academic Qualifications in Medicine is provided.	✓	✓	✓	✓	✓	✓	✓
3) The Course Specification (Form TQF 3) and the Field Experience Specification (Form TQF 4, if any) of all courses are provided before the semester begins.	✓	✓	✓	✓	✓	✓	✓
4) The Course Report (Form TQF 5) and the Field Experience Report (Form TQF 6, if any) of all courses are completed within 30 days after the semester ends.	✓	✓	✓	✓	✓	✓	✓
5) The Program Report (Form TQF 7) is completed within 60 days after the academic year ends.	✓	✓	✓	✓	✓	✓	✓
6) The students' learning achievements according to the	✓	✓	✓	✓	✓	✓	✓

Performance Indicator	The First Year	The Second Year	The Third Year	The Fourth Year	The Fifth Year	The Sixth Year	The Seventh Year
learning outcomes specified in the TQF 3 and TQF 4 (if any) of at least 25% of the courses offered in each academic year are verified.							
7) The teaching and learning process, the teaching strategies or the evaluation strategies are developed/improved according to the performance evaluation reported in the TQF 7 of the previous year.		✓	✓	✓	✓	✓	✓
8) All full-time faculty members qualify in accordance with the academic qualification standard for the Doctor of Medicine level at the minimum, or the proportion of full-time faculty members must comply with the academic qualification standard for the Doctor of Medicine level.	✓	✓	✓	✓	✓	✓	✓
9) All new faculty members are given orientation within one year and at least one medical education training within three years after performing in the positions of faculty members.	✓	✓	✓	✓	✓	✓	✓
10) All full-time faculty members	✓	✓	✓	✓	✓	✓	✓

Performance Indicator	The First Year	The Second Year	The Third Year	The Fourth Year	The Fifth Year	The Sixth Year	The Seventh Year
participate in academic and professional development programs for at least 15 hours per academic year.							
11) All support staff participate in development programs compatible with their responsibilities for at least 10 hours per academic year	✓	✓	✓	✓	✓	✓	✓
12) The average level of satisfaction of students in their final year/new graduates with the quality of the Program is at least 3.51 out of 5.00.						✓	✓
13) The average level of satisfaction of employers with new graduates is at least 3.51 out of 5.00.							✓
14) The average level of satisfaction of students with the teaching quality of physician instructors is at least 3.51 out of 5.00.	✓	✓	✓	✓	✓	✓	✓
15) The average level of satisfaction students with resources, which support the learning and teaching, is at least 3.51 out of 5.00.	✓	✓	✓	✓	✓	✓	✓

## Section 8 Program Evaluation and Improvement

### 1. Evaluation of Teaching Effectiveness

#### 1.1 Evaluation of Teaching Strategies

1.1.1 Assess the learning and teaching in all courses by students, using assessment forms, and summarize the results at the end of each course and academic year. Bring assessments and summaries to annual seminars on the learning and teaching management.

1.1.2 Organize a meeting of each department's instructors at the end of each course and academic year to share experiences in the learning and teaching and to consider directions for improvement.

1.1.3 Evaluate the student's learning outcomes as regards knowledge, skills and attitudes by different types of performance metrics to analyze strengths and weaknesses, to assign grades and to make further development.

#### 1.2 Evaluation of Faculty Members' Skills in Using Teaching Strategies

1.2.1 Collect student feedback on all aspects of teaching such as teaching methodology, time punctuality, clarifications of course goals and objectives, evaluation criteria and use of teaching aids.

1.2.2 Self- and peer- evaluations

1.2.3 Evaluate by educational experts to enter into an academic rank or to have employment contracts renewed.

### 2. Overall Program Evaluation

There is a process to obtain the information that reflects back to the overall quality of the Program such as:

2.1 Evaluation of the overall Program by student representatives, particularly students in their final year.

2.2 Evaluation of the overall Program by new graduates.

2.3 Evaluation by meetings/seminars of faculty members responsible for the Program, Program committee, other faculty members and academic staff.

2.4 Evaluation by scholars based on the Program performance report.

2.5 Evaluation by employers of graduates or other involved parties.

### **3. Evaluation of Program Performance**

The program performance is evaluated according to the Key Performance Indicators specified in Item 7 of Section 7. The evaluation is conducted by faculty members responsible for the Program, Program committee, Faculty committee and Faculty-level educational quality evaluation committee, which comprises both internal and external experts.

### **4. Review of Program Evaluation and Improvement Plan**

4.1 The information from course operational result reports is presented to the faculty members responsible for the Program.

4.2 The faculty members responsible for the Program and the Program instructors prepare the annual summary and the operational review and present them to the Doctor of Medicine Program committee and the Faculty committee.

4.3 A meeting of the Program instructors is conducted to discuss the operational results and feedback from all parties and to devise educational and Program-related improvement plans.