

Program Specification (TQF-2)



Curriculum

Bachelor of Science Program in Paramedicine

Name of Institution	Mahidol University
Campus / Faculty / Department	Faculty of Medicine Ramathibodi Hospital

Section 1 General Information

1. Code and Program Title

In Thai	หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาปฏิบัติการฉุกเฉินการแพทย์
In English	Bachelor of Science in Emergency Medical Operation

2. Degree Offered and Field of Study

In Thai	Full Title : วิทยาศาสตรบัณฑิต สาขาวิชาปฏิบัติการฉุกเฉินการแพทย์ Abbreviation : วท.บ.(ปฏิบัติการฉุกเฉินการแพทย์)
In English	Full Title : Bachelor of Science in Emergency Medical Operation Abbreviation : B.Sc.(Emergency Medical Operation)

3. Major Subject (If Applicable)

No

4. Total Credits Required

Total 140 credits

5. Curriculum Characteristics

5.1 Degree Level	Bachelor's degree
5.2 Type of the program	Professional bachelor's degree
5.3 Language	Thai
5.4 Admission	

Accepting only for Thai students in accordance with the regulations of the entrance examination for a higher education institution of the Office of the Higher Education Commission (OHEC), under the Ministry of Education and/or according to Regulations of Mahidol University on Diploma and Undergraduate Studies and/or as prescribed by the Faculty of Medicine Ramathibodi Hospital.

5.5 Collaboration with Other Institutions

A specific course of Faculty of Medicine Ramathibodi Hospital

5.6 Degree Offered

One degree of Bachelor of Science in Emergency Medical Operation

6. Record of Program Status and Approval / Endorsement

- 6.1 The program was initially established in 2015.
- 6.2 The Administrative committee of Faculty of Medicine Ramathibodi Hospital approved the program in meeting on November 11th, 2014.
- 6.3 The Faculty's Curriculum Development Committee of Faculty of Medicine Ramathibodi Hospital approved the program in its meeting on November 13rd, 2014.
- 6.4 The Bachelor's Curriculum Development Committee of Faculty of Medicine Ramathibodi Hospital approved the principle of the program in its meeting on November 26th, 2014.
- 6.5 The MU Council approved the principle of the program in its meeting on December 17th, 2014.
- 6.6 The program passed the consideration by The Bachelor's Curriculum Development Committee of Mahidol University on February 12th, 2015.
- 6.7 The program passed the Dean's conference, Mahidol University, on April 8th, 2015.
- 6.8 The MU Council approved the program on April 22nd, 2015.
- 6.9 Emergency Medical Board approved the program in its meeting on May 13th, 2015.
- 6.10 The MU Council was informed in a meeting no.478 on July 15th, 2015

7. Expected Date for the Implementation of Program under the Thai Qualifications Register (TQR) Record

The program is ready to publicize its excellence and standardization based on Thai Qualifications Framework for Higher Education (TQF: HEd) in academic year 2017.

8. Career Opportunities after Graduation

- 8.1 Paramedic in public hospitals
- 8.2 Paramedic in both domestically and internationally
- 8.3 Paramedic instructor

9. Name, Surname, Academic position, and Qualifications of the instructors responsible for the program

No.	Name-Surname	Academic position	Degree	Institute	Graduation year
1	Mrs.Yuwares Sittichanbuncha	Assoc. Prof.	- Diploma of Thai Board of Emergency Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2004

No.	Name-Surname	Academic position	Degree	Institute	Graduation year
			- Diploma of Thai Board of Family Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2003
			- Diploma of Thai Board of Internal Medicine	- Faculty of Medicine, Khon Kaen University	2000
			- Doctor of Medicine (First-Class Honors)	- Faculty of Medicine Siriraj Hospital, Mahidol University	1996
2	Mr. Chaiyaporn Yuksen	Lecturer	- Diploma of Thai Board of Emergency Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2010
			- Doctor of Medicine	- Faculty of Medicine, Prince of Songkhla University	2004
3	Mrs.Satariya Trakulsrichai	Asst. Prof.	- Diploma of Thai Subspecialty Board of Clinical Pharmacology and Toxicology	Faculty of Medicine Ramathibodi Hospital, Mahidol University	2012
			- Diploma of Thai Board of Emergency Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2004
			- Diploma of Thai Board of Family Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2003
			- Diploma of Thai Board of Internal Medicine	- Phramong kutklao College of Medicine	2000
			- Doctor of Medicine	- Faculty of Medicine,	1996

No.	Name-Surname	Academic position	Degree	Institute	Graduation year
			(Second-Class Honors)	Chulalongkorn University	
4	Mr. Surasak Leela-Udomlipi	Assoc. Prof.	- Diploma of Thai Subspecialty Board (Vascular Surgery)	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	2007
			- MSc. Vascular Technology & Medicine	- Imperial College, University of London	2007
			- Diploma, Thai Board of General Surgery	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1990
			- Doctor of Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1984
5	Mr. Preeda Sumritpradit	Asst. Prof.	- Diploma, Thai Board of General Surgery	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1998
			- Doctor of Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1993
6	Mr. Piya Samankatiwat	Assoc. Prof.	- Diploma, Thai Board of General Surgery	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1986
			- Doctor of Medicine	- Faculty of Medicine Ramathibodi Hospital, Mahidol University	1980

No.	Name-Surname	Academic position	Degree	Institute	Graduation year
			- Bachelor of Science	- Faculty of Graduate Studies, Mahidol University	1978
7	Flt.Lt. Atchariya Pangma	Emergency Medical board representative	- Diploma of Thai Board of Family Medicine - Aviation Medicine - Doctor of Medicine	- The Medical Council of Thailand - Royal Thai Air force - Faculty of Medicine, Srinakharinwirot	2001 1995 1994

10. Study Site Location

- 10.1 Mahidol University Salaya Campus
- 10.2 Department of Emergency Medicine, Faculty of Medicine Ramathibodi Hospital
- 10.3 Faculty of Science, Mahidol University
- 10.4 Phra Nakhon Si Ayutthaya Hospital, Phra Nakhon Si Ayutthaya Province
- 10.5 Nopparat Rajathanee Hospital, Bangkok
- 10.6 Maharat Nakhon Ratchasima Hospital, Nakhon Ratchasima Province
- 10.7 Chaophrayayommarat Hospital, Suphan Buri Province
- 10.8 Buriram Hospital, Buriram Province
- 10.9 Bhumibol Adulyadej Hospital, Bangkok
- 10.10 Saraburi Hospital, Saraburi Province
- 10.11 Erawan, Medical Department, Bangkok
- 10.12 National Institute for Emergency Medicine, Nonthaburi Province
- 10.13 Private Organization such as Poh Teck Tung Foundation and Ruamkatanyu Foundation

Section 2

Specific Data of the Program

1. Philosophy, rationale, and objectives of the program

1.1 Philosophy

Graduates, who have completed a Bachelor of Science program, Department of Emergency Medical Operations, have professional knowledge in emergency medical operations in prehospital, coordination skills, collaborate with other personnel in the field of emergency medicine as well as having leadership and ability to manage at the scene, ambulance center and command center. Also have knowledge about research, develop emergency medical knowledge to be up-to-date, eager to learn, have morals and ethics in the profession humble. Be able to adapt in different situations, good attitude and adherence to professional ethics, be able to transfer knowledge. Determined to develop the emergency medical system to advance in order to solve emergency medical problems and to reduce the gap in providing emergency medical services outside hospitals in Thailand.

1.2 Program Objectives

1.2.1 To develop graduates of Emergency Medical Operations with the following characteristics

1. be knowledgeable, have basic knowledge of science, social sciences, humanities, management, and applicable.
2. Healthy, good personality and emotional maturity and can collaborate with other personnel.
3. Good moral and public mind
4. Graduates have good citizenship skills, able to be part of a group, community or society and respect the dignity and human values.
5. Have critical thinking and curiosity about self-aware, understanding others, have the right thinking and positive work attitude and have goals and motivation.

1.2.2 To develop graduates with ability and be parts of emergency service

1. Having knowledge and ability of prehospital emergency care, during transport care, communication and referring patients to a medical facility under the orders of a medical director to reduce the additional injury and mortality rate.
2. Having ability to research or develop quality innovations related to prehospital care to develop prehospital knowledge.
3. Having abilities in coordinating and working with other emergency medical personnel
4. Possessing leadership skills and able to solve immediate problems with appropriate management in various situations
5. Having ability to indicate and analyze data to develop indicators which lead to further development.

6. Having physical and mental capacity which ready for work and capable to develop their physical and mental.

7. Disseminating prehospital knowledge to other personnel in the emergency medical system or the general public and able to transfer existing knowledge to other people.

8. Always up to date their own knowledge.

Section 3

Educational Management System, Program Implementation and Structure

1. Educational Management System

- 1.1 System Semester system
- 1.2 Summer Sessions No
- 1.3 Credit Equivalence Ratio (In Reference to Semester System)
 - 1. lecture 1 hour/week at least 15 hours as 1 credit whole semester.
 - 2. practice 2 hours/week during 30 - 45 hours as 1 credit whole semester.
 - 3. Clinical practice and field experience 3-6 hours/weeks as 1 credit whole semester.
 - 4. Research and other learning activities 45-90 hour as 1 credit
 - 5. Throughout the academic year, credits for each course, items (1), (2), (3) and (4) are required to be compliant used.

2. Course Implementation

Freshy year at Mahidol University, Salaya Campus
Sophomore year at Faculty of Science, Mahidol University
Junior year at Faculty of Medicine Ramathibodi Hospital, Mahidol University
Senoir year at Faculty of Medicine Ramathibodi Hospital, Mahidol University
and associate hospital

2.1 Learning Time

- 1. Theory section: Monday to Friday, 09:00-16:00.
- 2. Practical section: Monday to Sunday, 24 hours.

2.2 Admission Requirements

(1) being a graduate of the upper secondary education (grade 12) and having qualifications consistent with the regulations of the entrance examination for a higher education institution of the Office of the Higher Education Commission (OHEC), under the Ministry of Education and/or according to Regulations of Mahidol University on Diploma and Undergraduate Studies and/or as prescribed by the Faculty of Medicine Ramathibodi Hospital.

(2) Being a person of good behavior and must not be in the process of setting up an investigation committee in the event of an offense or defendant in a criminal case where a public prosecutor is a plaintiff.

(3) Having a healthy body and complete mental health, free from disease that will hinder education.

2.3 A Five-year Plan for Admission and Graduation

student	Academic year				
	2558	2559	2560	2561	2562
1 st year	30	30	30	30	40
2 nd year		30	30	30	30
3 rd year			30	30	30
4 th year				30	30
Total	30	60	90	120	130

2.4 Academic System

Formal Education

2.5 Credit Transfer and Cross-institutional Enrollment (If any)

According to Mahidol University regulations on Diploma and Bachelor's degree Education 2552.

3. Curriculum and Faculty Members

3.1 Curriculum

3.1.1 Number of Credits no less than 140 credits

3.1.2 Curriculum

1.General Education no less than 30 credits

 1.1 Social Sciences and Humanities 13 credits

 1.2 Languages 9 credits

 1.3 Sciences and Mathematics 8 credits

2.Core course no less than 104 credits

 2.1 Basic Profession Course 40 credits

 2.2 Specialized Course 64 credits

3. Free Elective 6 credits

3.1.3 Course List

In each course code, credit numbers are shown before the parentheses, and teaching hours and/or practicing hours and self-study hours are shown in the parentheses. For example, xxxx xxx(x-x-x) refers to a four-letter code of the course, three digits, and number of total credit hours (theory- practice- self-study). Below are how the course codes are set.

Course codes of the Bachelor of Science Program in Paramedicine, Faculty of Medicine Ramathibodi Hospital consist of 7 characters: 4 letters and 3 numbers.

A. Meaning of the 4 letters:

- The first 2 letters are the initials of the faculty/institution in charge, namely

MU	indicates that the course is jointly managed by different faculties in Mahidol University
RA	indicates Faculty of Medicine Ramathibodi Hospital
SC	indicates Faculty of Science
SH	indicates Faculty of Social Science and Humanities
LA	indicates Faculty of Liberal Arts

- The last 2 letters are the initials of the department/project in charge of teaching management.

Faculty of Medicine Ramathibodi Hospital

PD	indicates	Pediatrics
ID	indicates	Integrated Department Studies
OP	indicates	Ophthalmology
PC	indicates	Psychiatry
FO	indicates	Forensics
PA	indicates	Pathology
RD	indicates	Radiology
FM	indicates	Family Medicine
ER	indicates	Emergency Medicine
RM	indicates	Rehabilitation Medicine
AS	indicates	Anesthesiology
CM	indicates	Community Medicine
SU	indicates	Surgery
OT	indicates	Otolaryngology
OG	indicates	Obstetrics-Gynecology
MD	indicates	Medicine
OR	indicates	Orthopedics

Faculty of Science

ID	indicates	Integrated Department Studies
MA	indicates	Mathematics
CH	indicates	Chemistry
BC	indicates	Biochemistry
BI	indicates	Biology
PY	indicates	Physics

Faculty of Social Science and Humanities

SS	indicates	Social Science
HU	indicates	Humanities

Faculty of Liberal Arts

TH	indicates	Thai Language
EN	indicates	English Language

B. The 3 digits after the course initials:

- The first digit indicates the year of study.
- The last 2 digits indicate the order of the course offered in each course category to avoid repetition.

C. Course Overall course administration being:

1. General Education	no less than	30	credits
1.1 Social Sciences and Humanities		13	credits
MUGE 101	General Education for Human Development		2 (1-2-3)
MUGE 102	Social Studies for Human Development		3 (2-2-5)
MUGE 103	Arts and Science for Human Development		2 (1-2-3)
SHSS 144	Principle of Communication		2 (2-0-4)
SHSS 250	Public Health Laws and Regulations		2 (2-0-4)
SHHU 125	Professional Code of Ethics		2 (2-0-4)
1.2 Languages		9	credits
LAEN 103	English Level 1		3 (2-2-5)
LAEN 104	English Level 2		3 (2-2-5)
LAEN 105	English Level 3		3 (2-2-5)
LAEN 106	English Level 4		3 (2-2-5)
LATH 100	Arts of Using Thai Language Communication		3 (2-2-5)
1.3 Science and Mathematics		8	credits
SCID 111	Learning Techniques		1 (1-0-2)
SCBI 116	Introductory Biology		2 (2-0-4)
SCMA 170	Applicable basic Mathematics and Statistics		2 (2-0-4)
SCPY 159	Elementary Physics for Health Science		3 (3-0-6)
2. Core Courses	no less than	104	credits
2.1 Basic Profession Course		40	credits
LAEN 262	Listening and Speaking for Communication		2 (1-2-3)
RAER 203	Basic Medical Procedure		3 (2-2-5)
RAER 308	Research Methodology for Paramedic		3 (2-2-5)

RAER	309	Epidemiology for Paramedic	2 (2-0-4)
SCAN	101	Basic Anatomy	3 (2-3-5)
SCBC	206	General Biochemistry	3 (3-0-6)
SCBI	117	Foundation of Life	2(1.5-1-3.5)
SCCH	112	General Chemistry	3 (3-0-6)
SCCH	119	Chemistry Laboratory	1 (0-3-1)
SCCH	121	Basic Organic Chemistry	3 (3-0-6)
SCID	246	Basic Cell and Molecular Medicine	3 (2-2-5)
SCMI	206	Medical Microbiology & Parasitology	3 (2-2-5)
SCPA	202	Basic Pathology	2 (2-0-4)
SCPM	202	Basic Pharmacology	3 (3-0-6)
SCPS	202	Basic Physiology	3 (2-3-5)
SCPY	110	General Physics Laboratory	1 (0-3-1)

2.2 Specialized Courses

64 credits

RAER	201	Emergency Medical System	2 (2-0-4)
RAER	202	History Interview and Physical Examination for Paramedic 1	3 (2-2-5)
RAER	204	History Interview and Physical Examination for Paramedic 2	3 (2-2-5)
RAER	301	Emergency Medical Service 1	2 (1-2-3)
RAER	302	Emergency Medical Care 1	3 (2-2-5)
RAER	303	Emergency Care in Trauma 1	3 (2-2-5)
RAER	304	History Interview and Physical Examination for Paramedic 3	3 (2-2-5)
RAER	305	Basic Life Support	2 (1-2-3)
RAER	306	ECG Interpretation for Paramedic	2 (2-0-4)
RAER	307	Lifting and Moving	2 (1-2-3)
RAER	310	Advanced Life Support 1	3 (2-2-5)
RAER	311	Advanced Medical Procedure	3 (2-2-5)
RAER	312	Forensic Medicine for Paramedic	2 (2-0-4)
RAER	313	Emergency Medical Field Work 1	3 (0-12-3)
RAER	401	Emergency Medical Service 2	2 (1-2-3)
RAER	402	Emergency Medical Care 2	3 (2-2-5)
RAER	403	Emergency Care in Trauma 2	3 (2-2-5)
RAER	404	Advanced Life Support 2	3 (2-2-5)
RAER	405	Emergency Care in Mass Casualty Incident	2 (1-2-3)
RAER	406	Emergency Medical Field Work 2	3 (0-12-3)
RAER	407	Emergency Medical Field Work 3	4 (0-16-4)

RAER	408	Emergency Medical Field Work 4	4 (0-16-4)
RAER	409	Emergency Medical Field Work 5	4 (0-16-4)

3. Free Elective	no less than	6	credits
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RAER	205	English for Paramedic 1	2 (2-0-4)
RAER	314	English for Paramedic 2	2 (2-0-4)
SPGE	101	Aerobics for Health	1 (0-2-1)
SPGE	102	Yoga for Health	1 (0-2-1)
SPGE	103	Body Conditioning	1 (0-2-1)
SPGE	104	Lawn Tennis	1 (0-2-1)
SPGE	105	Soccer	1 (0-2-1)
SPGE	109	Swimming	1 (0-2-1)
SPGE	110	Basketball	1 (0-2-1)
SPGE	111	Volleyball	1 (0-2-1)
SPGE	112	Social Dance	1 (0-2-1)
SPGE	113	Table Tennis	1 (0-2-1)
SPGE	114	Badminton	1 (0-2-1)

3.1.4 Study Plan

Year 1 / Semester 1	Credits (lecture - practice - self-study)
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LAEN	104	English Level 1 OR	3 (2-2-5)
LAEN	105	English Level 3	
LATH	100**	Arts of Using Thai Language Communication	3 (2-2-5)
MUGE	101***	General Education for Human Development	2 (1-2-3)
MUGE	102**	Social Studies for Human Development	3 (2-2-5)
MUGE	103***	Arts and Science for Human Development	2 (1-2-3)
SCBI	116	Introductory Biology	2 (2-0-4)
SCBI	117	Foundation of Life	2(1.5-1-3.5)
SCCH	112	General Chemistry	3 (3-0-6)
SCCH	119**	Chemistry Laboratory	1 (0-3-1)
SCMA	170	Applicable basic Mathematics and Statistics	2 (2-0-4)

Total credits 19 credits

Year 1 / Semester 2			Credits (lecture - practice - self-study)
LAEN	104	English Level 1 OR	3 (2-2-5)
LAEN	105	English Level 3	
LATH	100**	Arts of Using Thai Language Communication	3 (2-2-5)
MUGE	101***	General Education for Human Development	2 (1-2-3)
MUGE	102**	Social Studies for Human Development	3 (2-2-5)
MUGE	103***	Arts and Science for Human Development	2 (1-2-3)
SCAN	101	Basic Anatomy	3 (2-3-5)
SCCH	119**	Chemistry Laboratory	1 (0-3-1)
SCCH	121	Basic Organic Chemistry	3 (3-0-6)
SCID	111	Learning Techniques	1 (1-0-2)
SCPY	110	General Physics Laboratory	1 (0-3-1)
SCPY	159	Elementary Physics for Health Science	3 (3-0-6)
SHSS	144	Principle of Communication	2 (2-0-4)
Total credits			20 credits

** continue course, credits count in first semester

*** continue course, credits count in second semester

Year 2 / Semester 1			Credits (lecture - practice - self-study)
LAEN	262	Listening and Speaking for Communication	2 (1-2-3)
RAER	201	Emergency Medical System	2 (2-0-4)
RAER	202	History Interview and Physical Examination for Paramedic 1	3 (2-2-5)
SCBC	206	General Biochemistry	3 (3-0-6)
SCID	246	Basic Cell and Molecular Medicine	3 (2-2-5)
SCPA	202	Basic Pathology	2 (2-0-4)
SHSS	250	Public Health Laws and Regulations	2 (2-0-4)
Total credits			17 credits

Year 2 / Semester 2	Credits (lecture - practice - self-study)
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RAER	203	Basic Medical Procedure	3 (2-2-5)
RAER	204	History Interview and Physical Examination for Paramedic 2	3 (2-2-5)
SCMI	206	Medical Microbiology & Parasitology	3 (2-2-5)
SCPM	202	Basic Pharmacology	3 (3-0-6)
SCPS	202	Basic Physiology	3 (2-3-5)
SHHU	125	Professional Code of Ethics	2 (2-0-4)

Total credits 17 credits

Year 3 / Semester 1	Credits (lecture - practice - self-study)
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RAER	301	Emergency Medical Service 1	2 (1-2-3)
RAER	302	Emergency Medical Care 1	3 (2-2-5)
RAER	303	Emergency Care in Trauma 1	3 (2-2-5)
RAER	304	History Interview and Physical Examination for Paramedic 3	3 (2-2-5)
RAER	305	Basic Life Support	2 (1-2-3)
RAER	306	ECG Interpretation for Paramedic	2 (2-0-4)
RAER	307	Lifting and Moving	2 (1-2-3)
		Free Elective	2 (2-0-4)

Total credits 19 credits

Year 3 / Semester 2	Credits (lecture - practice - self-study)
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RAER	308	Research Methodology for Paramedic	3 (2-2-5)
RAER	309	Epidemiology for Paramedic	2 (2-0-4)
RAER	310	Advanced Life Support 1	3 (2-2-5)
RAER	311	Advanced Medical Procedure	3 (2-2-5)
RAER	312	Forensic Medicine for Paramedic	2 (2-0-4)
RAER	313	Emergency Medical Field Work 1	3 (0-12-3)
		Free Elective	2 (2-0-4)

Total credits 18 credits

Year 4 / Semester 1			Credits (lecture - practice - self-study)
RAER	401	Emergency Medical Service 2	2 (1-2-3)
RAER	402	Emergency Medical Care 2	3 (2-2-5)
RAER	403	Emergency Care in Trauma 2	3 (2-2-5)
RAER	404	Advanced Life Support 2	3 (2-2-5)
RAER	405	Emergency Care in Mass Casualty Incident	2 (1-2-3)
RAER	406	Emergency Medical Field Work 2	3 (0-12-3)
		Free Elective	2 (2-0-4)
Total credits			18 credits

Year 4 / Semester 2			Credits (lecture - practice - self-study)
RAER	407	Emergency Medical Field Work 3	4 (0-16-4)
RAER	408	Emergency Medical Field Work 4	4 (0-16-4)
RAER	409	Emergency Medical Field Work 5	4 (0-16-4)
Total credits			12 credits

3.1.5 Course Description

1. General Education

1.1 Social Sciences and Humanities

MUGE 101 General Education for Human Development

Pre-requisite -

Well-rounded graduates, key issues affecting society and the environment with respect to one' particular context; holistically integrated knowledge to identify the key factors; speaking and writing to target audiences with respect to objectives; being accountable, respecting different opinions, a leader or a member of a team and work as a team to come up with a systematic basic research-based solution or guidelines to manage the key issues; mindful and intellectual assessment of both positive and negative impacts of the key issues in order to happily live with society and nature

MUGE 102 Social Studies for Human Development

Pre-requisite -

Basic principles and theory in relation to events / situations / major problems of the Thai and global communities, for example, evolution of civilization; important events in historical, political and public administration systems; the economic and

health systems, etc.; analysis of causes and consequences of events / situations / problems; synthesis of solutions to, precautions against, or improvements in those events / situations to benefit individuals and their community; and the application of knowledge to solve the problems of case studies.

MUGE 103 Arts and Science for Human Development

Pre-requisite -

Humankind in the past, present and future; events / situations / problems in relation to the evolution of the arts and sciences in the Thai and global communities; concepts of the sufficiency economy; analysis of causes and consequences of events / situations / problems; synthesis of solutions to, precautions against, or improvements in those events / situations to benefit individuals and their community; and the application of knowledge to solve the problems of case studies.

SHHU 125 Professional Code of Ethics

Pre-requisite -

Concepts and ethical principles of people in various professions, journalists, politicians, businessmen, doctors, government officials, policemen, soldiers; ethical problems in the professions and the ways to resolve them

SHSS 144 Principles of Communication

Pre-requisite -

The importance of communication; information transferring, understanding, language usage, behavior of sender and receiver personality and communication; effective communication problems in communication

SHSS 250 Public Health Laws and Regulations

Pre-requisite -

Introduction to law justice procedure; law and regulation for doctor and public health practitioners, medical treatment act, practice of the art of healing act, medical service act, food act, drug act, criminal code, civil and commercial code; ministerial regulation, rule and regulation relating to public health administration

1.2 Languages

LAEN 103 English Level 1

Pre-requisite -

English structure, grammar and vocabulary in the context of daily language use, dealing with integration in listening, speaking, reading, and writing skills; reading strategies, sentence writing, listening for the gist, pronunciation and classroom communication

LAEN 104 English Level 2

Pre-requisite LAEN 103 English Level 1

Vocabulary, expressions, grammar, and contextualized social language; essential communicative skills in small groups; simulations in various situations; writing practice at a paragraph level; and reading and listening from various sources

LAEN 105 English Level 3

Pre-requisite -

Essential strategies for four language skills: reading and listening from various sources, speaking in everyday use and writing at a paragraph level and short essay, including sub-skills i.e., grammar, pronunciation, and vocabulary; focusing on English in everyday life and in academic reading and issues that enhance students world knowledge

LAEN 106 English Level 4

Pre-requisite LAEN 105 English Level 3

Integrating four English skills by practicing reading news, research articles, commentary, and academic texts, for comprehension and critical thinking, from various sources focusing on the issues that enhance students world knowledge; listening to news, lecture, and speech via multimedia and the Internet; making conversations in various situations including speaking in public, giving oral presentations and making simulations; and writing essays in various types using citations and references; also practicing sub-skills such as grammar, pronunciation and vocabulary used in appropriate context

LATH 100 Arts of Using Thai Language in Communication

Pre-requisite -

Art of Thai language and of speaking, listening, reading, writing, and thinking skills in accurately and appropriately communicating

1.3 Science and Mathematics

SCID 111 Learning Techniques

Pre-requisite -

Group process, PBL process, PBL 1, PBL 2, TBL, Mind Mapping, Information retrieval from textbooks, journals and websites

SCBI 116 Introductory Biology

Pre-requisite -

Chemistry of life and biomolecules, cellular biology, cell energy, genetic and genetic disease, DNA technology and its medical applications, evolution, human evolution, ecology and pollution problem and biodiversity

SCMA 170 Applicable basic mathematics and statistics

Pre-requisite -

Mathematical and statistical concepts, skills and techniques applicable in everyday life: systems of linear equations, matrices, linear programming, sets and counting principles, probability and decision

SCPY 159 Elementary Physics for Health Science

Pre-requisite -

Mechanics of motion and equilibrium, work and energy, elastic properties of matters, fluid mechanics and blood circulatory system, temperature, heat, gas law and respiratory system, waves and wave properties, ears and hearing, lights and vision, electricity, magnetism, electricity in human body, electronics, atoms, nuclei and nuclear medicine

2.Core Courses: no less than 104 credits

2.1 Basic Profession Course 40 credits

LEAN 262 Listening and Speaking for Communication

Pre-requisite -

Practicing listening and speaking in everyday life situation; discussion; speech acts; interpretations; analyzing data from conversation, lectures, and reading academic issues, news, and reports from various sources

RAER 203 Basic Medical Procedure

Pre-requisite RAER 202 History Interview & Physical Examination for Paramedic 1

Basic medical procedures, airway techniques, the oxygen delivery systems, suction, pain control and sedation; diagnostic procedures, genital/urinary procedures, head and neck procedures, ophthalmological procedures; drug administration techniques, principles of disease control and diffusion, preparation of patients for emergency surgery; collecting organ fragments, collecting clinical specimens; utilization and maintenance of medical tools, practice in basic procedure techniques with models and simulations

RAER 308 Research Methodology for Paramedic

Pre-requisite -

Introduction to clinical research methodology; types of data; research questioning; searching of literatures and researches; literature reviews; research designs in cohort study, cross-sectional study, case-control study, experimental study, diagnostic accuracy; introduction to STATA program, basic clinical statistics

RAER 309 Epidemiology for Paramedic

Pre-requisite RAER 308 Research Methodology for Paramedic

Epidemiological definitions, measurement and epidemiological tool; components of the etiology, health service research, health economic research; investigations of diseases, surveillance, control and prevention, assessment and testing equipment; an application of epidemiological information in the emergency medical service development

SCAN 101 Basic Anatomy

Pre-requisite -

Structures and functions of cell and tissues of the integumentary system, skeletal system, muscular system, circulatory system, respiratory system, digestive system, excretory system, endocrine system, reproductive system and special sense organs of human beings

SCBC 206 General Biochemistry

Pre-requisite -

Basic structures and functions of five biomolecules, carbohydrate, lipid, protein nucleic acid and hemoglobin; basic metabolic processes of five biomolecules, its regulation, detoxication and excretion; the flow of genetic information and gene regulation; basic role of biomolecules related to the normal physiological systems; miscellaneous topic of biochemical importance and its application to paramedic

SCBI117 Foundation of Life

Pre-requisite -

Systematic classification of living organisms; reproduction and development in human and animals; comparative physiology of organ systems in human and animals, diseases and abnormalities, including nervous system, receptor and motor system, digestive system, endocrine system, gas exchange and excretory system, circulatory system and immune system; and basic biology laboratories

SCCH 112 General Chemistry

Pre-requisite -

Atomic structure, chemical bonding; gases, liquids, solid, solutions, colloids; chemical thermo-dynamics; chemical kinetics; chemical equilibrium, ionic equilibrium, electrochemistry, the present of periodic table

SCCH 119 Chemistry Laboratory

Pre-requisite -

Experiments of general chemistry and basic organic chemistry include determinations of scientific errors, significant numbers, precision and accuracy, preparation of solution and titration, rate of reaction, chemical equilibrium, quantitative analysis using spectroscopy, solubility classification, use of models to study stereochemistry of organic substance, reaction of hydrocarbons, reaction of alcohols and phenols, reactions of aldehydes and ketones, reactions of carboxylic acids and derivatives, reaction of amines

SCCH 121 Basic Organic Chemistry

Pre-requisite -

Molecular structure and classification of organic compounds, reactions of organic compounds, nomenclature and stereochemistry, syntheses and reactions of alkanes, cycloalkanes, alkenes, aromatic, hydrocarbons, halides, alcohols, phenols, ethers, aldehydes, ketones, carboxylic acids, carboxylic acid derivatives, amines

SCMI 206 Medical Microbiology & Parasitology

Pre-requisite -

Introduction to the basic principle of immunology, microbiology and parasitology including morphology and growth of microorganisms and parasites, methods of microbial genes transfer and drug resistant genes transfer, role of microorganisms in nature, sterile techniques, pathogenicity of microorganisms and parasites, host immune responses, medically important parasites, basic laboratory tests to detect microorganisms, virus, and parasites.

SCID 246 Basic Cell and Molecular Medic

Pre-requisite –

Structure and function of cell membrane, role of cell membrane receptors in medicine, intra- and intercellular communication, important medical mediators, cell life cycle, cell division, cellular structure changes, aging and dying and related drugs, fundamental principles in pharmacodynamics and pharmacokinetics

SCPA 202 Basic Pathology

Pre-requisite -

Introduction to Pathology of cell injury, cell death and adaptation, inflammation, healing and repair, disturbances of fluid and blood flow, immunoproliferative disorders, neoplasia, genetic diseases, bacterial infection, viral infection, fungal infection and parasitic infections, metabolic disorders, environmental pathology, nutrition pathology.

SCPM 202 Basic Pharmacology

Pre-requisite -

Pharmacological principles, pharmacokinetics, pharmacodynamics, drugs use in the autonomic nervous system, cardiovascular system, and kidney. Drugs use in central nervous system, respiratory system, digestive system, endocrine and reproductive systems. Antimicrobial drugs, anticancer drugs, skin drugs, vitamin pills.

SCPS 202 Basic Physiology

Pre-requisite -

The course covers basic concepts and principles of cell functions and the functions of various organ systems in the body. These include nervous, muscular, cardiovascular, respiratory, renal, gastrointestinal tract, endocrine and reproductive systems as well as temperature regulation. It also deals with the mechanisms of regulation of organ system integration and adaptations in order to keep the body in a homeostatic state.

SCPY110 General Physics Laboratory

Pre-requisite -

Basic Physics experiments relating to Physics curriculums taught to the first year students in each faculty

RAER 201 Emergency Medical System

Pre-requisite -

The emergency medical system, definition, origin and significance; the development of the emergency medical system in Thailand and international; the role of the dispatch center, the level of emergency medical service, the role of the emergency operations at different levels; the Emergency Medical Act 2551, laws related to emergency medicine; established procedures for emergency medical services; standard ambulance; prearrival instruction; scene size up; scene safety and dealing with unsafe situation at the scene; the emergency care at the scene; communications in the emergency medical system; aeromedical transportation; indicators and quality improvement; the emergency medical system in disaster situations

RAER 202 History Interview and Physical Examination for Paramedic 1

Pre-requisite -

Emergency room triage, medical history interviewing for paramedic, physical exam and practice in the rapid physical assessment; medical records, performing and interpreting vital signs, history interview, physical examination and practicing examination in the respiratory and cardiovascular system; communication with patients, symptomatology in the respiratory and cardiovascular system, medical ethics and practice in medical history; interviewing and physical exam of emergency cases in the respiratory and cardiovascular system

RAER 204 History Interview and Physical Examination for Paramedic 2

Pre-requisite RAER 202 History Interview & Physical Examination for Paramedic 1

Emergency room triage, history interview, physical examination and practicing examination in the neurological, musculoskeletal, dermatological system and pediatric patients, communication with patients; symptomatology in the neurological, musculoskeletal, dermatological system and pediatric, medical ethics and practicing in medical history interviewing and physical exam of emergency cases in the neurological, musculoskeletal, dermatological systems and pediatric patients

RAER 301 Emergency Medical Service 1

Pre-requisite RAER 201 Emergency Medical System

Principles of operation in the emergency medical system, physical and mental performance for paramedic, emergency vehicles, preparation and maintenance; principles of emergency vehicle driving and safe parking, devices on emergency vehicles, preparing and maintaining equipment on emergency vehicles, vehicles and equipment for air transportation; communications and information in the emergency medical system, radio communications equipment for emergency operations and maintenance; visiting the command center of the National Institute of

emergency medicine and the Bangkok Emergency Medical Service Center (Erawan Center)

RAER 302 Emergency Medical Care 1

Pre-requisite RAER 203 Basic Medical Procedure

RAER 204 History Interview & Physical Examination for Paramedic 2

Principles of emergency medical care, initial patient assessment and evaluation at the scene; anatomy, pathophysiology; on scene medical care in respiratory emergency, cardiovascular emergency, neurological, gastrointestinal disorder, immunology, infectious diseases, endocrine disorder, and shock; practice in emergency medical care in the emergency department

RAER 303 Emergency Care in Trauma 1

Pre-requisite RAER 203 Basic Medical Procedure

RAER 204 History Interview & Physical Examination for Paramedic 2

Principles of prehospital care in trauma patients; mechanism of injury; scene safety and scene size up; initial assessment and management in trauma patients with shock, chest injury, abdominal and pelvic injury, musculoskeletal injury, traumatic brain injury, spinal injury; injury prevention; medical record in trauma; practicing with models and simulation; practicing in the emergency medical care in the emergency department and the ambulance unit

RAER 304 History Interview and Physical Examination for Paramedic 3

Pre-requisite RAER 204 History Interview & Physical Examination for Paramedic 2

History interviewing, physical examinations, symptomatology and practicing examination in the gastrointestinal system; obstetric and gynecologic, ocular emergency and other emergency conditions; medical recording and practice in the medical history; interviewing and physical examination of emergency cases in the gastrointestinal system, obstetric and gynecologic, ocular emergency and other emergency conditions

RAER 305 Basic Life Support

Pre-requisite RAER 203 Basic Medical Procedure

Initial assessment in unconscious patients; the use and maintenance of automatic electrical device, high quality chest compression, ventilation in adults and pediatric cardiac arrest; steps of basic life support in infants, children, adults, management of foreign body obstruction in the respiratory tract; life supporting equipment maintenance and practice in basic life supports with models and simulations

RAER 306 ECG Interpretation for Paramedic

Pre-requisite RAER 203 Basic Medical Procedure

Mechanism of the electrocardiogram (ECG), equipment used in the ECG examination; basic interpretation of ECG, ventricular fibrillation, ventricular tachycardia, pulseless electrical activity, asystole, tachyarrhythmia, bradyarrhythmia; abnormal ECG in acute myocardial infarction, cardiomegaly, valvular disease, electrolyte imbalance, toxicology and the initial management of abnormal ECG patients

RAER 307 Lifting and Moving

Pre-requisite RAER 203 Basic Medical Procedure

Principles of lifting and moving in emergency patients; body mechanic, safety and prevention of injuries from lifting; lifting techniques, helmet removal in trauma, emergent, urgent and non-urgent lifting and moving techniques, lifting and moving equipment; patient position and stabilization, lifting and moving in car wreck, ruins and confined space, lifting and moving with a high level; marine transportation, air transportation and practice in lifting and moving in hospital transfer, on scene transfer and emergency room transfer

RAER 310 Advanced Life Support 1

Pre-requisite RAER 305 Basic Life Support

Principles in advanced life support in adults, basic life support skills, advanced airway management, surgical cricothyroidotomy for emergency opened airway; pharmacology in advanced life support, interpretations of abnormal ECG; management of acute coronary syndromes, management of stroke, recognition and early management of peri-arrest conditions; advanced equipment maintenance and practicing in advanced life support with models and simulations

RAER 311 Advanced Medical Procedure

Pre-requisite RAER 203 Basic Medical Procedure

Airway techniques, adult ventilation-assisted mechanic, pediatric ventilation-assisted mechanic, mechanical ventilation-assisted; genital urinary procedures, hemodynamic techniques, hemodynamic monitoring; obstetrics procedures, skeletal procedures, other advanced procedures; utilizing and maintaining of emergency medical tools, other advanced emergency practices with models and simulations

RAER 312 Forensic Medicine for Paramedic

Pre-requisite SHSS 250 Public Health Laws and Regulations

Definition of forensic medicine for paramedic, laws, principles for an analysis of the cause of death; identification, unnatural death, autopsy, exhumation, writing

reports, wound examination; sexual abuse, child abuse, collecting witnesses and evidences at the incidence site; an analysis of the cause of death, the change after death, dead body transferring and tools used in forensic medicine

RAER 313 Emergency Medical Field Work 1

Pre-requisite RAER 301 Emergency Medical Service 1

RAER 302 Emergency Medical Care 1

RAER 303 Emergency Care in Trauma 1

Clinical experiences in the emergency room, phone triage, dispatching information, radio communication; priority dispatching, prearrival information, on scene management, on route management; lifting and moving, online medical direction, offline medical direction, practicing in operation room and labor room, normal labor, abnormal labor and neonatal resuscitation

RAER 401 Emergency Medical Service 2

Pre-requisite RAER 301 Emergency Medical Service 1

Principles of communication, co-operation, and receiving an emergency call; EMS record, phone triage, scene triage, prearrival instruction, online and offline medical command, scene size-up; ethics in the EMS operation, principles of emergency medical service operation with other agencies and practicing with simulations

RAER 402 Emergency Medical Care 2

Pre-requisite RAER 302 Emergency Medical Care 1

Principles of emergency medical care, initial patient assessment and evaluation at the scene; anatomy, pathophysiology, on scene medical care in toxicology, psychiatric and suicidal attempt patients; toxic bite and stings, obstetric, gynecological, neonatal care, pediatrics, geriatrics, palliative care; musculoskeletal disorders, genitourinary, renal, diseases of the eyes, ears, throat, and nose; hematological disorder and practice in the emergency medical care in the emergency department

RAER 403 Emergency Care in Trauma 2

Pre-requisite RAER 303 Emergency Care in Trauma 1

Principles of prehospital care in trauma, mechanism of injury, scene safety, and scene size up; initial assessment in pregnancy patients, pediatric, elderly, cognitively impaired patients; maxillofacial injury, eye injury, environmental injury, animal bite, radiation injury, blast injury, multiple traumas, post exposure prophylaxis, trauma quality management; practicing with models and simulations and practicing in emergency medical care in emergency departments and trauma units

RAER 404 Advanced Life Support 2

Pre-requisite RAER 310 Advanced Life Support 1

Principles in pediatric basic life support, pediatric and newborn advance life support, advance life support in pregnant patients, elderly patients, intoxication patients and trauma patient; advanced equipment maintenance, skill development in the advanced life supporting, practicing with models and simulations

RAER 405 Emergency Care in Mass Casualty Incident

Pre-requisite RAER 403 Emergency Care in Trauma 2

Principles in mass casualty incidents and disasters, general management in mass casualty incidents and disasters; mass casualty triage, decontamination, the incident command system, natural and manmade disasters, disasters from blast injuries, biological disasters, chemical disasters; risk assessment and risk analysis, emergency response teams in disasters, hospital preparedness in disasters;

recovery phase in disasters, psychological recovery and disaster prevention, practicing in mass casualty management with models and simulations

RAER 406 Emergency Medical Field Work 2

Pre-requisite RAER 310 Advanced Life Support 1

RAER 311 Advanced Medical Procedure

Clinical experiences in on scene management, on route management; teaching skills to other EMS personnel, prehospital advanced cardiovascular life support; prehospital pediatric cardiovascular life support, prehospital neonatal resuscitation, prehospital trauma life support; work-life balance for paramedic, ethical issues in prehospital emergency care.

RAER 407 Emergency Medical Field Work 3

Pre-requisite RAER 402 Emergency Medical Care 2

RAER 311 Advanced Medical Procedure

RAER 401 Emergency Medical Service 2

RAER 402 Emergency Medical Care 2

RAER 404 Advanced Life Support 2

Clinical experiences in the dispatching center (Phra Na Khon Sri Ayutthaya Hospital, Maharat Nakhon Ratchasima Hospital and Chaophraya Abhaibhubejhr Hospital); clinical practices in phone triage, dispatching information, radio communication; priority dispatch, prearrival information

RAER 408 Emergency Medical Field Work 4

Pre-requisite RAER 402 Emergency Medical Care 2

RAER 311 Advanced Medical Procedure

RAER 401 Emergency Medical Service 2

RAER 402 Emergency Medical Care 2

RAER 404 Advanced Life Support 2

Clinical experiences in prehospital care (Srisaket Hospital, Chumphae Hospital and Udon Thani Hospital) clinical practices in on scene management, on route management, lifting and moving, online medical direction, offline medical direction

RAER 409 Emergency Medical Field Work 5

Pre-requisite RAER 402 Emergency Medical Care 2

RAER 311 Advanced Medical Procedure

RAER 401 Emergency Medical Service 2

RAER 402 Emergency Medical Care 2

RAER 404 Advanced Life Support 2

Clinical experiences in emergency room (Trang Hospital, Surat Thani Hospital and Maharaj Nakhon sri Thammarat Hospital); clinical practices in resuscitation room, inter facility transfer, lifting and moving, online and offline medical direction.

4. Components Related to Field Training Experience (Trainings or Multi-Activity Education)

The curriculum has provided the courses with required activities of practically field experiences and internship for increasing clinical skills. They are involved with education and profession practices in real situations, such as emergency medical dispatch centers or advanced life support operational unit.

4.1 Standard of Learning Outcome for Field Training Experience

The expected learning outcomes of experiences in internship / cooperative education of students is as follows:

- (1) Be competence in taking care of emergency patients in out-of-hospitals setting and during transportation, communicating and coordinating to definite facilities under medical directions or oversights.

- (2) Possess skills and abilities to conduct researches or to develop innovations with good quality which are about taking care of emergency patients in out-of-hospitals setting or developing emergency medical system of Thailand.
- (3) Possess good abilities to coordinate and work together with other emergency medical personnel or healthcare profession.
- (4) Be leadership in emergency medical operation and be able to solve facing problems or manage situations suitably.
- (5) Be able to keep key performance indicators of emergency medical operation and be able to analyze data leading to system development.
- (6) Be able to maintain physical and mental fitness readiness for emergency medical operation.
- (7) To propagate knowledge about emergency medication out of hospitals to officers in other emergency medical systems or general people well, to have teacher skills, and to be able to knowledge to others
- (8) Always develop knowledge to be up to date.

4.2 Duration

Year	Course	Credits / hours	Annotation
3	RAER 313 Emergency Medical Field Work 1	3 (0-12-3) (180 hours)	
4	RAER 406 Emergency Medical Field Work 2	3 (0-12-3) (180 hours)	
4	RAER 407 Emergency Medical Field Work 3	4 (0-16-4) (240 hours)	
4	RAER 408 Emergency Medical Field Work 4	4 (0-16-4) (240 hours)	
4	RAER 409 Emergency Medical Field Work 5	4 (0-16-4) (240 hours)	

4.3 Schedules

Year	Course	Semester
3	RAER 313 Emergency Medical Field Work 1	Second Semester
4	RAER 406 Emergency Medical Field Work 2	First Semester
4	RAER 407 Emergency Medical Field Work 3	Second Semester
4	RAER 408 Emergency Medical Field Work 4	Second Semester
4	RAER 409 Emergency Medical Field Work 5	Second Semester

5. Requirements for Project or Research Work

5.1 Brief Description

The curriculum has provided the courses requirements for project or research work in RAER 201 Research Methodology for Paramedic (3 credits), RAER205 Research Project for Paramedic 1 (2 credits) and RAER403 Research Project for Paramedic 2 (2 credits). 2-3 students in each research groups must conduct 1 research or innovation before graduation.

5.2 Standard of Learning Outcome

Students can practice in conducting medical research. Able to search for up-to-date and reliable clinical epidemiological data, able to write a research proposal, understand and follow research ethics, perform self-data collection and analysis of both quantitative and qualitative results and present research results at national or international conferences.

5.3 Duration

Theory section in Junior year, second semester, and practical section in senior year.

5.4 Credits

2 credits

5.5 Evaluation Procedure

1. Evaluate the progress of a research study using the research progression assessment form.
2. Evaluate the interest and responsibility of the research study by recording of the advisors
3. Evaluate research reports and presentation using rubric assessment scale

Section 4

Program-level Learning Outcomes, Teaching Methods, and Evaluation

1. Student Development

Characteristics	Teaching Method
1.1 Personality - Dress politely - Confidently presentation - good interpersonal and able to work with other	- Clear rules for dressing and working - Presentation technique training - Observation and introduction of presentation by lecturer and friends - Personality evaluate by lecturer and friends and feedback
1.2 Leadership - Responsibility to work - On time - Decidable and accept other opinions - Well coordination	- Encourage extracurricular activities to develop management skills and leadership - Organize teaching in group - Practice for being punctual in class - Promote various activities
1.3 Volunteer - Students are interested in activities - Participate in activities regularly	- Encourage to participate in special activities - Encourage to participate activities in training site - Encourage to participate in voluntary service - Encourage to participate in social and academic activities
1.4 Self-learning - Self researching - Research skill - Develop knowledge according to evidence base	- Learning with evidence base - Encourage to new evidence - A research per 3 students - Assign a project for self-research

2. Learning Outcome

2.1 Morals and Ethics

- 1) Awareness of moral and ethical practice
- 2) Comply with ethics and able to deal with problem
- 3) Discipline, honestly, sacrifice and responsibility to oneself and other
- 4) A role model for others
- 5) Respect in laws, right and accept other opinion. Respect values and dignity of human

2.2 Knowledge

- 1) Understanding in science, management, humanities, social science and relate science

- 2) Understanding the core body of emergency medical operation and able to apply to relate science widely
- 3) Understanding in process of knowledge management and tracking
- 4) Understanding in laws and orders related to emergency medical operation

2.3 Intellectual

- 1) Able to research and evaluate information from various sources
- 2) Able to think systematically and suggest constructively
- 3) Able to use skills thorough emergency medical information
- 4) able to develop and solve problems in operation

2.4 Interpersonal and Responsibility

- 1) Adaptable and interact constructively with co-worker and related persons
- 2) Able to work as a team in both member and leader role
- 3) Able to demonstrate leadership in appropriate situation
- 4) Responsibility to personal and professional development

2.5 Numerical analysis, communication and technology

- 1) Understanding issues and able to apply statistical techniques related to emergency operation
- 2) Communicate effectively and suitable presentation in difference group of people
- 3) Using technology to collect, process, interpret and present information regularly

2.6 Professional

- 1) Having skill in emergency operation as the standard
- 2) Able to prevent illness at individual and community
- 3) Performing with morality, ethics, professional ethics and related laws
- 4) Manageable local emergency medical system

3. Evaluation

3.1 Morals and Ethics

- 1) Evaluate activities participation about student's ethical
- 2) Evaluate of morality and ethics during studies and work by lecturer, colleagues and other students.
- 3) Evaluate ethical activities participation
- 4) Behavior observation of participation
- 5) Evaluate morality and ethics of graduates

3.2 Knowledge

- 1) Examination after ending courses
- 2) Evaluate presentation
- 3) Evaluate case report
- 4) Bedside oral examination
- 5) Midterm and final examination
- 6) Evaluation development by portfolio

- 7) Evaluate graduates' ability
- 8) Certifying competence in emergency medical operation

3.3 Intellectual

- 1) Evaluate discussion activities
- 2) Evaluate case report
- 3) Evaluate practical training
- 4) Evaluate research

3.4 Interpersonal and Responsibility

- 1) Evaluate ability to work in team and human related with colleagues
- 2) Evaluate responsibility for attending class
- 3) Evaluate on group work

3.5 Numerical analysis, communication and technology

- 1) Evaluate group discussion
- 2) Evaluate techniques and presentation skill
- 3) Evaluate technology skill for learning
- 4) Evaluate case report

3.6 Professional

- 1) Evaluate practical skills
- 2) Practical examination such as OSCE, long case examination
- 3) Written examination
- 4) Evaluate while field practice

Section 5

Student Evaluation Criteria

1. Grading Rules / Guidelines

Follow by Regulations of Mahidol University on Diploma and Undergraduate Studies and Regulations announced by Faculty of Medicine Ramathibodi Hospital. Defining grading and student evaluation include that:

1. Theoretical evaluation i.e., Multiple Choice Question (MCQ), Modified Essay Question (MEQ), Constructed Response Question (CRQ) and Short Answer Question (SAQ)
2. Practical evaluation i.e., Objective Structured Clinical Examination (OSCE), direct observation and long case examination
3. Attitude evaluation: Direct observation (Rubric scale) from six components including responsibility, honesty, teamwork, appreciation, self-development, holistic care. Attitude evaluation uses OSMU symbol, not scoring system.

Symbol	Meaning
O	Outstanding
S	Satisfactory
M	Marginal
U	Unsatisfactory

In theory and practical evaluation will grade in scoring system 1-4:

1. Theoretical evaluation is written examination that students must achieve score in each evaluation not fewer than 2.0 (PASS).
2. Practical evaluation: students must achieve score in each evaluation not fewer than 2.0 (PASS).

And students must achieve score/grade (theory and practice) more than 2.00 (PASS) then multiply with weighted average, sum all score (cumulative score) and compare to grade as follows:

Cumulative Score	Grade
3.50 - 4.00	A
3.25 - 3.49	B+
3.00 - 3.24	B
2.50 – 2.99	C+
2.00 – 2.49	C
1.50 – 1.99	D+
1.00 – 1.49	D
< 1.00	F

Study Results

1. Students should not have study time fewer than 80% of total study time, So If students have study time fewer than 80%, students will be disqualified in final exam except case of necessity.

2. If result of ethics and moral evaluation is U (not pass), Department / Faculty / University will not consider other scores and not pass in this course (grade F). So, students must re-register the course again.

3. Judgment

3.1 Students must be achieved score/grade (theory and practice) more than 2.00 (PASS) and each evaluation must pass together.

(1) Theoretical evaluation is written examination that students must achieve score in each evaluation not fewer than 2.0 (PASS)

(2) Practical evaluation: students must achieve score in each evaluation not fewer than 2.0 (PASS). All score must not fewer than 2.00 and compare to grade A, B+, B, C+, C, D+, D and F. Student must be achieved grade more than C.

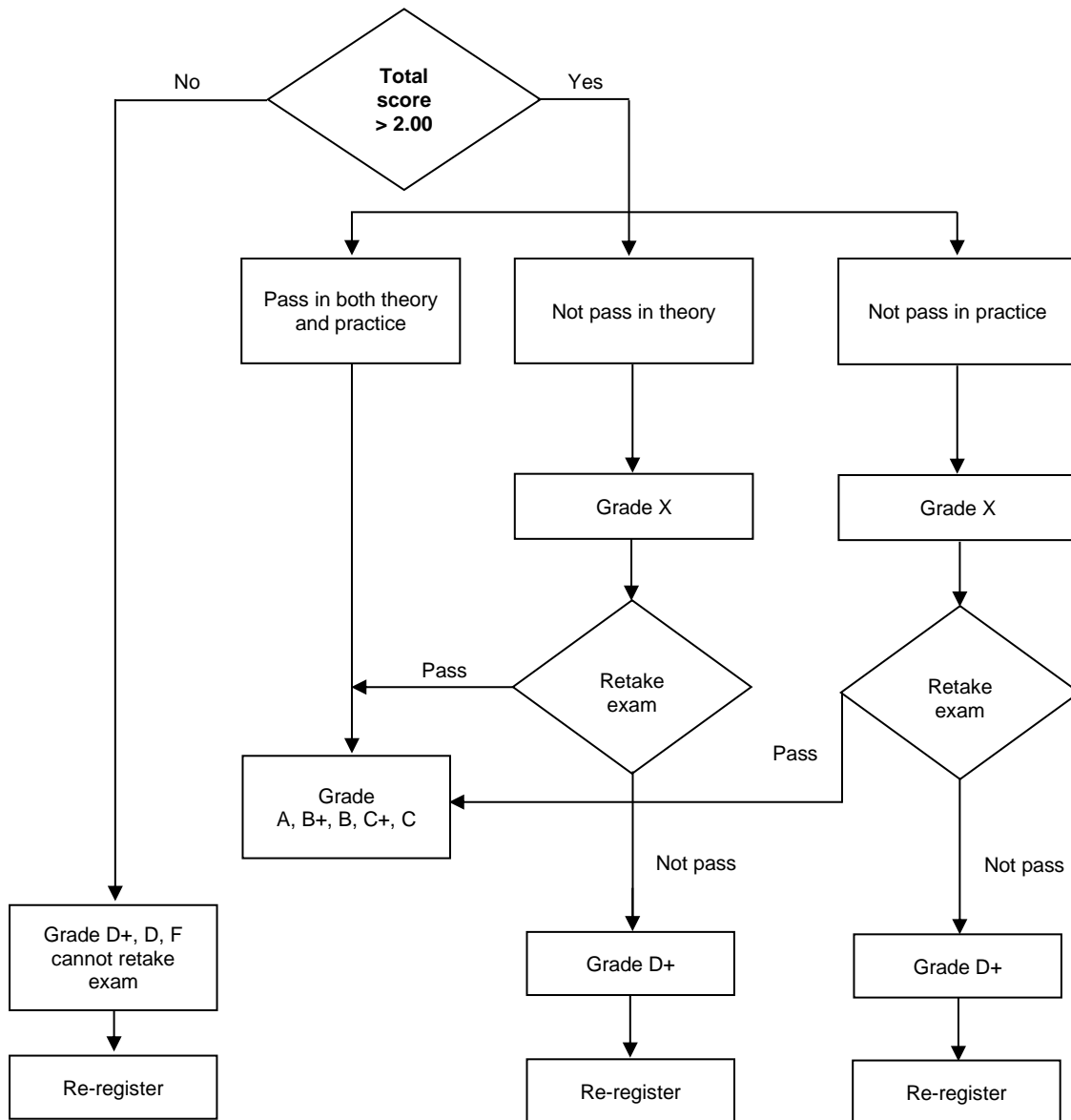
3.2 If students have total score equal or more than 2.00 but each test not pass (< 2.00), department will show grade in X and give opportunity for retake the exam 1 time within the duration that department defines. If students pass in retaking the exam, students can get actual total score. And, if student not pass in retaking the exam, students will get D+ and must re-register the course again.

3.3 If students have total score equal or more than 2.00 but practical evaluation not pass (< 2.00), department will show grade in X and give opportunity for more practice appropriately. If students pass in re-practice, students can get actual total score. And, if student not pass in re-practice, Students will get D+ and must re-register the course again.

3.4 If students have total score fewer than 2.00, students will not have opportunity in retake the exam. Students will get D+, D, and F (from actual total score) and must re-register the course again.

Criterion for retaking the exam is shown in the diagram below

Criterion for retaking the exam



2. Graduation Requirements

Graduation criteria

- 2.1 Being a person of good behavior appropriate for the dignity of the Bachelor of Science Program in Paramedicine
- 2.2 Pass examinations for all courses and complete the curriculum.
- 2.3 Obtain a cumulative grade point average throughout the course of not less than 2.00
- 2.4 Must pass the program's comprehensive examination

Honors criteria

Undergraduate students who study not less than 120 credits, including courses the transfer to subject or faculty transfer from other higher education, and a course with grade not less than B without bringing credits or regular points that compared to transfer credits to calculate the cumulative point. Student will be considered as a first-class honor if GPA not less than 3.50 and second-class honor if GPA not less than 3.25 with these following requirement:

- Must complete all courses within 4 Years.
- Students taking minors must complete all required minor courses within 4 years and 2 trimesters. (Not included a Half-Minor).
- Never receive an F and/or W grade in any course
- Must not have an I grade in any course
- Must never re-grade or re-examine in any subject
- Must not transfer more than 25 percent of the total required credits from another institution with the exception of courses taken.