

Doctor of Philosophy
Medical Biochemistry and Molecular Biology (International Program)
(Updated version, 2012)

1. Degree Program : Doctor of Philosophy Program in Medical Biochemistry and Molecular Biology
(International program)

2. Degree Offered : Doctor of Philosophy Program in Medical Biochemistry and Molecular Biology
: Ph.D (Medical Biochemistry and Molecular Biology)

3. Responsible Department/Faculty

Department of Biochemistry, Faculty of Medicine, Khon Kaen University
Graduate School, Khon Kaen University

4. Objectives

The international program for Ph.D in Medical Biochemistry and Molecular Biology (Edited program, 2012) aims to produce PhD graduates who have the following features.

- (1) An understanding of professional standards, principles and theories in Medical Biochemistry and Molecular Biology and related fields, to conduct research for solving complicated problems and creating new knowledge and transferring to the development of their academic or professional according to professional standards.
- (2) The ability to use English to produce and publish scholarly work or knowledge in international level.
- (3) The ability to use the science or mathematics and statistics or the research methodology in critical thinking or problem solving in operational or technical problems, complex and developing new knowledge.
- (4) The ability to use computers and information technology in the pursuit of self and to innovate the academic work.
- (5) The knowledge and skills in research management that can be utilized in the work efficiently.
- (6) Discipline, integrity and responsibility to themselves, their families, profession, society and the nation according to the research ethics, love and pride in region, institutions, and the nation.
- (7) Leadership, understanding in social and cultural diversities, capability to work with others in both national and international level.

5. Curriculum

5.1 Total Credit Hours

Total credit hours for Type 1.1 program not less than	48 credits
Total credit hours for Type 2.1 program not less than	48 credits
Total credit hours for Type 2.2 program not less than	72 credits

5.2 Program Structures (●noncredit course)

	Number of credits		
	Type 1.1	Type 2.1	Type 2.2*
1) Compulsory courses	3●	11	14
2) Elective courses	-	1	10
3) Dissertation	48	36	48
Total	48	48	72

*Occasionally, if the students have passed the courses assigned in the program, they have to enroll other courses or repeat the courses according to the suggestion of the Program Executive Committee to get the total coursework of 12 credits.

6. Courses

6.1 Compulsory courses

Type 1.1 Program: the courses are as tools for searching and establishing knowledge related to Medical Sciences and are common-core compulsory courses for all Medical Science Programs.

Type 2.1 Program: students must register at least 11 credits of the courses listed below or some additional course which will be notified later with the permission of the Program Executive Committee.

356 712 Cells and Molecular Biology	3(3-0-6)
356 713 Laboratory Techniques in Medical Sciences	2(0-6-3)
363 702 Medical Biochemistry and Molecular Biology	3(3-0-6)
363 991 Seminar in Medical Biochemistry and Molecular Biology I	1(1-0-2)
363 992 Seminar in Medical Biochemistry and Molecular Biology II	1(1-0-2)
363 993 Seminar in Medical Biochemistry and Molecular Biology III	1(1-0-2)

Type 2.2 Program: students must register at least 14 credits of the course listed as similar to Type 2.1 program plus an additional course listed below and some courses which will be notified later with the permission of the Program Executive Committee.

356 714 Medical Sciences Research Methodology	3(2-3-6)
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6.2 Elective courses:

Type 1.1 Program: None

Type 2.1 Program: Students must register at least 1 credits of the course listed below or some additional courses which will be notified later with the permission of the Program Executive Committee.

Type 2.2 Program: Students must register at least 10 credits of the course listed below or some additional courses which will be notified later with the permission of the Program Executive Committee.

362 712	Infection and Immunity I	2(2-0-4)
362 732	Bioinformatics	2(1-3-4)
363 701	Biochemistry for Graduate Student	3(3-0-6)
363 703	Experiments in Medical Biochemistry and Molecular Biology	2(0-6-3)
363 711	Medical Nutrition	2(2-0-4)
363 713	Advanced Molecular Biology of Genes	2(2-0-4)
363 715	Biochemistry and Molecular Biology of Cancer	2(2-0-4)
363 716	Medical Biotechnology	2(2-0-4)
363 718	Principles and Techniques in Molecular Biology	1(1-0-2)
363 719	Advanced Computational Molecular Biology	1(0-3-2)
363 895	Selected Topics in Medical Biochemistry and Molecular Biology II	1(1-0-2)
363 896	Selected Topics in Medical Biochemistry and Molecular Biology I	1(1-0-2)

6.3 Dissertation

Type 1.1 Program:

363 997Dissertation 48 credits

Type 2.1 Program:

363 999Dissertation 36 credits

Type 2.2 Program:

363 998Dissertation 48 credits

7. Class Schedule (●Noncredit course)

Plan for type 1.1

Course code	Year 1, First semester Course name	Credit Type 1.1
*363 991	Seminar in Medical Biochemistry and Molecular Biology I	1(1-0-2)●
363 997	Dissertation	9
	Total credits registered	9
	Sum of the credits	9

Course code	Year 1, Second semester Course name	Credit Type 1.1
*363 992	Seminar in Medical Biochemistry and Molecular Biology II	1(1-0-2)●
363 997	Dissertation	9
	Total credits registered	9
	Sum of the credits	18

Course code	Year 2, First semester Course name	Credit Type 1.1
*363 993	Seminar in Medical Biochemistry and Molecular Biology III	1(1-0-2)●
363 997	Dissertation	9
	Total credits registered	9
	Sum of the credits	27

Course code	Year 2, Second semester Course name	Credit Type 1.1
363 997	Dissertation	9
	Total credits registered	9
	Sum of the credits	36

Course code	Year 3, First semester Course name	Credit Type 1.1
363 997	Dissertation	9
	Total credits registered	9
	Sum of the credits	45

Course code	Year 3, Second semester Course name	Credit Type 1.1
363 997	Dissertation	3
	Total credits registered	3
	Sum of the credits	48

Plan for type 2.1 and 2.2

Course code	Year 1, First semester Course name	Credit	
		Type 2.1	Type 2.2
356 712	Cells and Molecular Biology	3(3-0-6)	3(3-0-6)
356 713	Laboratory Techniques in Medical Sciences	2(0-6-3)	2(0-6-3)
*363 991	Seminar in Medical Biochemistry and Molecular Biology I	1(1-0-2)	-
xxx xxx	Electives	-	4
363 998	Dissertation	-	-
363 999	Dissertation	3	-
	Total credits registered	9	9
	Sum of the credits	9	9

Course code	Year 1, Second semester Course name	Credit	
		Type 2.1	Type 2.1
356 714	Medical Science Research Methodology	-	3(2-3-6)
363 702	Medical Biochemistry and Molecular Biology	3(3-0-6)	3(3-0-6)
*363 992	Seminar in Medical Biochemistry and Molecular Biology II	1(1-0-2)	-
xxx xxx	Electives	1	6
363 998	Dissertation	-	-
363 999	Dissertation	4	-
	Total credits registered	9	12
	Sum of the credits	18	21

Course code	Year 2, First semester Course name	Credit	
		Type 2.1	Type 2.1
363 991	Seminar in Medical Biochemistry and Molecular Biology I	-	1(1-0-2)
*363 993	Seminar in Medical Biochemistry and Molecular Biology III	1(1-0-2)	-
363 998	Dissertation	-	8
363 999	Dissertation	8	-
	Total credits registered	9	9
	Sum of the credits	27	30

Course code	Year 2, Second semester Course name	Credit	
		Type 2.1	Type 2.1
*363 992	Seminar in Medical Biochemistry and Molecular Biology II	-	1(1-0-2)
363 998	Dissertation	-	8
363 999	Dissertation	9	-
	Total credits registered	9	9
	Sum of the credits	36	39

Course code	Year 3, First semester Course name	Credit	
		Type 2.1	Type 2.1
*363 993	Seminar in Medical Biochemistry and Molecular Biology III	-	1(1-0-2)
363 998	Dissertation	-	8
363 999	Dissertation	9	-
	Total credits registered	9	9
	Sum of the credits	45	48

Course code	Year 3, Second semester Course name	Credit	
		Type 2.1	Type 2.1
363 998	Dissertation	-	9
363 999	Dissertation	3	
	Total credits registered	3	9
	Sum of the credits	48	57

Course code	Year 4, First semester Course name	Credit	
		Type 2.1	Type 2.1
363 998	Dissertation	-	9
363 999	Dissertation	-	-
	Total credits registered		
	Sum of the credits	-	66

Course code	Year 4, Second semester Course name	Credit	
		Type 2.1	Type 2.1
363 998	Dissertation	-	6
363 999	Dissertation	-	-
	Total credits registered	-	6
	Sum of the credits	-	72