Program Structure and Specification

Master of Science Program in Clinical Sciences (International Program)

Curriculum Last Revised in 2021
For Students Entering in Academic Year 2021

1. Program Title : Master of Science Program in Clinical Sciences (International Program)

2. Name of Degree

Full name : Master of Science (Clinical Sciences)
Abbreviation : M.Sc. (Clinical Sciences)
FIELD OF STUDY :
: Clinical Sciences
: Global Health and Tropical Medicine
: Ophthalmology
: Rhinology and Allergy
: Medical Parasitology
: Pathology
: Clinical Pathology
: Clinical Pharmacology

3. Responsible Units

Graduate Affairs, Faculty of Medicine, Chulalongkorn University

4. Philosophy and Expected Learning Outcomes of the Program

4.1 Philosophy of the Program:

The program was designed based on the following principles.

Program's Philosophy:

The multi-disciplinary program in clinical sciences aims to produce competent clinical researchers with specialized scientific ability and skills, ready to be part of the active national and international driving force for health sustainability.

Vision:

Commitment to make impactful contribution to health sustainability by cultivating competent clinical researchers for the society and producing research works toward challenging health problems.

Mission:

1) To efficiently manage the program to produce high quality graduates who possess advanced knowledge and skills in clinical research, and are well equipped with skills, attitude and leadership to serve the society at all levels.
2) To ensure the productivity of innovative research work of international quality in areas of clinical sciences, that can be translated into practice and/or innovation beneficial to all mankind.

4.2 Expected Learning Outcomes of the Program:

The ELOs are classified as follows:

1. Identify, interpret, and critique relevant clinical literature
2. Develop a logical clinical research question/ proposal to fill in the gap of health challenges
3. Design scope of clinical research and to choose appropriate methodologies
4. Understand in depth and select the analytical and diagnostic technology/techniques/tools and methodologies relevant to research project
5. Uphold the international ethical, scientific and practical standards and regulatory requirements
6. Demonstrate proficiency in the skills needed to conduct clinical research, either independently or in collaboration with research partners
7. Analyze data and justify the results to make accurate conclusion of research outputs
8. Effectively communicate scientific information to professionals and the lay public through writing and/or oral communication.

5. Admission Requirements

5.1 Applicants must be studying in the final year at the bachelor level, or hold a degree in B.Sc. in Medicine, Dentistry, Veterinary Science, Health sciences or Biological Science.

5.2 Applicants must have a valid English Proficiency Scores, followed the requirement of Faculty of Graduate Studies, Chulalongkorn University.

5.3 Applicants whose credentials differ from above requirement could apply to the program if the permission is granted by the Program Committee in concurrence with Faculty of Graduate Studies, Chulalongkorn University.

5.4 International students can apply through Online Active Recruitment at http://grad.md.chula.ac.th/.

6. Selection Methods

The candidates are screened by their overall undergraduate/graduate application documents including academic and research background by the program committees. All eligible applicants are then subjected to an interview (online or onsite) in English language by the program committees and potential advisors, and their overall performances are judged using rubric scale.

Final decision will be made after the discussion of the Program Committee.

7. Academic System

7.1 Semester system

Semester

7.2 Credit Assignment

The number of credits assigned to each subject is determined as follows:

1. Lecture or discussion consuming 15 hours per semester is equal to 1 credit hour.
2. Laboratory or practice consuming 30 hours per semester is equal to 1 credit hour.
3. Thesis consuming 45 hours per semester is equal to 1 credit hour.

8. Language

English is used in teaching and the assessment processes.

9. Registration

9.1 Students must register as full-time students.

9.2 Students must register for no less than 9 credits and no more than 15 credits per semester, or according to program study plan.

10. Evaluation and Graduation Requirements

10.1 Evaluation

Student evaluation is in accordance with Chulalongkorn University Graduate Studies Regulation. (See details at https://www.grad.chula.ac.th)

10.2 Graduation Requirements

Student evaluation is in accordance with Chulalongkorn University Graduate Studies Regulation. (See details at https://www.grad.chula.ac.th/news_detail.php?news_id=207&cat_id=1)

1. All master's degree students in Plan A1 must

1.1 register for at least 36 credits of thesis and register for Course 3000706 Professional Development and Course 3000707 Seminar and Journal Club in Clinical Sciences as non-credit courses, evaluation as S/U in every semester until graduation and receive S in the last semester. Total credits acquired must at least 36 credits. A cumulative GPA must be 3.00 or more.

1.2. present thesis and pass the thesis examination according to the rules and regulations of Faculty of Graduate Studies, Chulalongkorn University.

1.3 obtain at least one publication that has been accepted for publication as a journal article at the national or international level.

2. All master's degree students in Plan A2 must

2.1 register for at least 18 credits of coursework and 18 credits of thesis. Students must register for Course 3000706 Professional Development and Course 3000707 Seminar and Journal Club in Clinical Sciences as non-credit courses, evaluation as S/U in every semester until graduation and receive S in the last semester. Total credits acquired must at least 36 credits. A cumulative GPA must be 3.00 or more.

2.2 present thesis and pass the thesis examination according to the rules and regulations of Faculty of Graduate Studies, Chulalongkorn University.

2.3 obtain at least one publication that has been accepted for publication as a journal article or a conference proceeding at the national or international level.

11. Program Structure

11.1 The number of credits required for the program

Number of credits required for the program is at least 36 credits.

11.2 Curriculum Structure

Credits	Program Structure	
	Plan A1 (Thesis only)	Plan A2 (Thesis + Coursework)
Total credits	36	36
Coursework	-	18
Required courses	-	9
Field courses	-	6
Elective courses	-	3
Thesis	36	18

Students must register for Course 3000706 Professional Development and Course 3000707 Seminar and Journal Club in Clinical Sciences as non-credit courses, evaluation as S/U in every semester until graduation and receive S in the last semester.

11.3 Course Requirements

Courses		credits (lecture-lab-self study)
1. Required courses		**9 credits**
3000703	Research Methodology in Clinical Sciences	3(1-6-5)
3000705	Research Projects in Clinical Sciences	3(0-9-3)
3000706	Professional Development	S/U
3000707	Seminar and Journal Club in Clinical Sciences	S/U
3000793	Fundamental Biostatistics in Clinical Sciences Research	3(2-3-7)
2. Field courses		**6 credits**
2.1 Clinical Sciences		
3000704	Biostatistics in Clinical Science Research	3(1-6-5)
3000792	Systemic Literature Review and Meta-Analysis	3(2-3-7)
2.2 Global Health and Tropical Medicine		
3000710	Advanced Tropical Medicine and Global Medicine 1	3(1-6-5)
3000711	Advanced Tropical Medicine and Global Medicine 2	3(1-6-5)
2.3 Ophthalmology		
3000704	Biostatistics in Clinical Science Research	3(1-6-5)
3003916	General Ophthalmology	3(2-3-7)
2.4 Rhinology and Allergy		
3000770	Clinical Rhinology	2(1-6-1)
3000771	Endoscopic Sinus and Skull Base Surgery	2(1-6-1)
3000772	Nasal Allergy	2(1-6-1)

Courses		credits (lecture-lab-self study)
2.5 Medical Parasitology		
3008701	Advanced Medical Parasitology I	3(1-6-5)
3008831	Special Research Project in Parasitology	3(0-9-3)
2.6 Pathology		
3009713	Practical Cytopathology	2(0-6-2)
3009719	Laboratory Practice in Pathology	2(0-6-2)
3009720	Laboratory Practice in Immunopathology	2(0-6-2)
2.7 Clinical Pathology		
3013802	Diagnostic Hematology	3(1-6-5)
3013803	Diagnostic Clinical Chemistry	3(1-6-5)
2.8 Clinical Pharmacology		
3010724	Clinical pharmacology and therapeutics I	3(0-9-3)
3010725	Clinical pharmacology and therapeutics II	3(0-9-3)
3. Elective courses		**3 credits**
3000704	Biostatistics in Clinical Science Research	3(1-6-5)
3000708	Advanced Clinical Sciences	3(1-6-5)
3000709	Current Topics in Clinical Sciences	1(1-0-3)
3000710	Advanced Tropical Medicine and Global Medicine I	3(1-6-5)
3000711	Advanced Tropical Medicine and Global Medicine II	3(1-6-5)
3000712	Traveling and Touring Medicine	3(1-6-5)
3000713	Rehabilitation Medicine for Musculoskeletal Pain	4(1-9-6)
3000714	Neuro-rehabilitation	4(1-9-6)
3000715	Clinical Sciences Project Proposals for Grant Application	1(1-0-3)
3000737	Scientific Publication and Presentation in the Age of Information Technology	1(1-0-3)
3000755	Bioinformatics in Biomedical Sciences and Biotechnology	2(1-3-4)
3000757	Protein Expression and Purification	2(1-3-4)
3000758	Stem Cell Biology	3(3-0-9)
3000759	Applied Regenerative Medicine	2(2-0-6)
3000761	Medical Molecular Diagnostics	2(2-0-6)
3000763	Protein Biochemistry	2(2-0-6)
3000764	Molecular Biology and Cellular Biotechnology	2(2-0-6)
3000767	Systems Biology	2(2-0-6)
3000769	General Rhinology	2(1-7-0)
3000770	Clinical Rhinology	2(1-7-0)
3000771	Endoscopic sinus and skull base surgery	2(1-7-0)
3000738	Facial plastic and reconstructive surgery I	2(1-7-0)
3000739	Facial plastic and reconstructive surgery II	2(1-7-0)
3000773	Surgical Retina I	3(1-6-5)

Courses		credits (lecture-lab-self study)
3000774	Surgical Retina II	3(1-6-5)
3000775	Medical Retina I	3(1-6-5)
3000776	Medical Retina II	3(1-6-5)
3000777	Basic intraocular inflammation and uveitis	3(1-6-5)
3000778	Basic intraocular inflammation and uveitis	3(1-6-5)
3000779	Pediatric retina	1(1-2-1)
3000780	Special topic in posterior segment	1(0-2-2)
3000781	Imaging in Posterior segment disease	1(1-0-3)
3000782	Female Pelvic Medicine and Reconstructive Surgery I	3(1-6-5)
3000783	Female Pelvic Medicine and Reconstructive Surgery II	3(1-6-5)
3000784	Surgery in Female Pelvic Medicine and Reconstructive Surgery	4(1-9-6)
3000785	Urodynamics in Female Pelvic Medicine	4(1-9-6)
3000790	Publication Ethics and Peer Review Process	1(1-0-3)
3000791	Reading Clinical Research Articles	2(1-2-5)
3000792	Systemic Literature Review and Meta-Analysis	3(2-3-7)
3000793	Fundamental Biostatistics in Clinical Sciences Research	3(2-3-7)
3001730	Special Topics in Molecular Biology Research	1(1-0-3)
3003915	Basic Sciences in Ophthalmology	2(2-0-6)
3001730	Special Topics in Molecular Biology Research	1(1-0-3)
3005715	Genetic Engineering	2(2-0-6)
3008704	Molecular Biology of Parasites	3(2-3-7)
3008708	Seminar in Parasitology I	1(1-0-3)
3008801	Seminar in Parasitology II	1(1-0-3)
3010724	Clinical pharmacology and therapeutics I	3(0-9-3)
3010725	Clinical pharmacology and therapeutics II	3(0-9-3)

Students are able to register any graduate courses in Chulalongkorn University or other universities which are approved by the program committees.

4. Thesis

Plan A1

3000816	Thesis	36 credits

Plan A2

3000813	Thesis	18 credits

11.4 Program Structure of the Master Program in Clinical Sciences

	1st Semester	2nd Semester
Year-1	**Thesis (Plan A1)** **Core/Elective Courses (Plan A2)** Seminar and journal club in clinical sciences	**Thesis (Plan A1)** **Core/Elective Courses (Plan A2)** Seminar and journal club in clinical sciences
	Professional Development	**Professional Development**
Year-2	**Thesis** Seminar and journal club in clinical sciences	**Thesis** Seminar and journal club in clinical sciences
	Professional Development	**Professional Development**

12. Proposal Examination

Students must submit a document to the program committees within their second academic year after the enrollment. The program committees will approve the document for the appointment of Thesis Proposal Committee consisting of at least 3 faculty members.

13. Thesis Defense

After the students have completed their thesis writing, students must submit a document to the program for the appointment of Thesis Defense Committee consisting of at least 3 members: a committee chair, an external examiner and the advisor. After passing the thesis examination, students can submit final thesis to Faculty of Graduate Studies.

14. Job Opportunities

The knowledge and skills acquired while earning a degree in Clinical Sciences Program can be applied to pursue a career path in academic institutions, government agencies, research institutes, non-profit organization, private industry, healthcare organizations, and a range of local to international organizations.