

Who we are – our history

The Section for Clinical Epidemiology and Biostatistics (CEB) under the Faculty of Medicine Ramathibodi Hospital, Mahidol University, had been established since 1986 under the name of Clinical Epidemiology Unit. Since then, it was expanded to be the CEB in 2004. Our main responsibilities are to educate and facilitate the Faculty's members and Thai academic staffs in doing research. Four international programs of Doctor of Philosophy (Ph.D.) and Master of Science (M.Sc.) programs in Clinical Epidemiology and Data Science for Health Care have been developed complying with Mahidol University and the Faculty's visions and missions of being the world class university and excellence in health sciences and leader in national health advocacy.

Ph.D. in Clinical Epidemiology

Expected Learning Outcomes (ELOs)

Graduates should be able to

ELO 1.	integrate and apply knowledge in Clinical Epidemiology, Evidence-based Medicine (EBM), Biostatistics, Health Social Science, Health Economics, and IT in their clinical/public health practice.
ELO 2.	apply EBM skills for various questions in routine clinical practice.
ELO 3.	perform advanced statistical analysis for various clinical and health science researches.
ELO 4.	develop research protocol in clinical and health science researches using various study designs.
ELO 5.	conduct research complying with international ethical standards and collaborate with research teams
ELO 6.	disseminate/communicate research findings or evidences to public by applying IT

Program structure

Program	Required courses	Elective courses	Research	Total credits
Plan I: Research only	-	-	48	48
Plan II: Coursework and research	23	4	48	75

Enrollment criteria

Plan I: Research only

1. Graduated Doctor of Medicine, Pharmacy, Dentistry, Health Sciences, medical specialty certificate or other related disciplines and graduated appropriate Master's degree (e.g. Clinical Epidemiology, Epidemiology, Biostatistics, Clinical Economics Health Sciences, or other related disciplines) or graduated in medical specialty certificate. (Diploma of Fellowship of the Royal College of Physicians)
2. Grade point average at least 3.50.
3. Have at least 3 publications in peer-reviewed international journals, as the first or corresponding author.
4. English test score according to the requirements for English proficiency established by the Faculty of Graduate Studies of Mahidol University.
5. If an applicant does not meet the above criteria, but has other suitable qualification and experience, they may be considered to apply for admission by the Program Director and The Dean of Faculty of Graduate Studies

Plan II: Coursework and research

The same criteria as plan I, except not requiring publication in a peer-reviewed international journal.

M.Sc.in Medical Epidemiology

ELOs

Graduates should be able to

ELO 1.	Be able to integrate and apply knowledge in Medical Epidemiology, Biostatistics and research methodology.
ELO 2.	Be able to apply evidence-based medicine skills* for various questions in routine clinical practice and research.
ELO 3.	Be able to perform statistical analysis for various medical or public health researches
ELO 4.	Be able to conduct research complying with international ethical standards and collaborate with research teams
ELO 5.	be lifelong health innovation learners in big data and health care system.
ELO 6.	Be able to disseminate/communicate research findings or evidences to public by applying IT

Program structure

Program	Required courses	Elective courses	Research	Total credits
Coursework with research	20	4	12	36

Enrollment criteria

1. Graduated Doctor of Medicine, Pharmacy, Dentistry and other related disciplines.
2. Having cumulative GPA not less than 2.75.
3. Have a suitable English Proficiency Examination score according the requirements of Faculty of Graduate Studies.
4. If an applicant does not meet the above criteria, but has other suitable qualifications and experience, may be considered to apply for admission by the Program Director and The Dean of Faculty of Graduate Studies.

Lists of coursework for Ph.D.(Clin Epidemiol) and M.Sc. (Med Epidemiol)

Course ID	Course title, Credits
RACE622	Study Designs & Measurements in Clinical Epidemiology, 3
RACE625	Medical Statistics in Clinical Research, 3
RACE611	Clinical Epidemiology and Evidence-based Medicine, 3
RACE 624/RAME 624	Research Informatics and Data Management, 3/2
RACE608	Social Science in Clinical Practice and Research, 2
RACE626	Advanced Statistical Analysis in Clinical Research, 3
RACE603	Research Protocol Design, 2
RACE607/RAME607	Clinical Economics, 3/2
RACE617	Randomized Controlled Trials, 2
RACE618/ RAME618	Systematic review & Meta-analysis, 3/2
RACE799/ RACE898/ RACE698	Thesis, 48/48/12

Ph.D. in Data Science for Health Care

ELOs

Graduates should be able to

ELO 1.	conduct data science research in health care with international standard proven by international ethical publications.
ELO 2.	integrate and apply data mining and machine learning algorithms to various types and sizes of health care data.
ELO 3.	design and recommend data framework in health care system.
ELO 4.	work as a team, communicate and disseminate research findings with efficient visualisation.
ELO 5.	be lifelong health innovation learners in big data and health care system.

Program structure

Program	Required courses	Elective courses	Research	Total credits
Plan I: Research only	-	-	48	48
Plan II-A: Coursework and research	9	3	36	48
Plan II-B: Coursework and research	16	8	48	72

Enrollment criteria

Plan I: Research only for student with M.Sc. Data Science for Health Care degree

1. Graduated Master degree in Data Science for Health Care from an accredited national or international academic institution recognized and attested by the Higher Education Commission
2. Grade point average not less than 3.50
3. Have an English Proficiency Examination score as the requirement of Faculty of Graduate Studies
4. Work or have experience as an instructor or researcher in data sciences or relevant fields at least three years

5. Have at least 3 publications in peer-reviewed international journals within last 5 years, as the first or corresponding author.
6. Exemptions from the above conditions may be granted by the Program Committee under exceptional circumstances

Plan II-A: Coursework and Research for student with other Master’s degree

1. Graduated Master degree in health sciences, computer related disciplines, or graduated in medical specialty certificate, e.g., Diploma of Fellowship of The Royal College of Physicians
2. Grade point average not less than 3.50
3. Have an English Proficiency Examination score as the requirement of Faculty of Graduate Studies
4. Exemptions from the above conditions may be granted by the Program Committee under exceptional circumstances

Plan II-B: Coursework and Research for student with Bachelor’s degree

The same criteria as Plan II-A for other Master degree students except, applicants graduated Bachelor degree in Doctor of Medicine, Computer Sciences, Informatics, Statistics, Health Sciences, or other related disciplines.

M.Sc. in Data Science for Health Care

ELOs

Graduates should be able to

ELO 1.	conduct Data Science research and/or use of data in health care complying with international ethical publications.
ELO 2.	integrate and apply data mining and machine learning algorithms to various types and sizes of health care data.
ELO 3.	design data framework in health care system.
ELO 4.	work as a team and communicate research findings with efficient visualisation.
ELO 5.	be lifelong health innovation learners in big data and health care system.

Program structure

Program	Required courses	Elective courses	Research	Total credits
Thesis plan	16	8	12	36
Thematic paper plan	16	14	6	36

Enrollment criteria

1. Graduated Pharmacy, Health Sciences, computer related and other related disciplines.
2. Having cumulative GPA not less than 2.75.
3. Have a suitable English Proficiency Examination score according the requirements of Faculty of Graduate Studies.
4. If an applicant does not meet the above criteria, but has other suitable qualifications and experience, may be considered to apply for admission by the Program Director and The Dean of Faculty of Graduate Studies.

Coursework for Ph.D. and M.Sc. in Data Science for Health Care

Course ID	Course title, Credits
RADS 608	Principles and Concepts of Health Systems 2
RACE 625	Medical Statistics in Clinical Research, 3
RADS 603	Business Intelligence, 2
RADS 601	Health Informatics and Health Information Technology, 3
RADS 602	Data Mining and Machine Learning, 3
RACE 626	Advanced Statistical Analysis in Clinical Research, 3
RACE 603	Attend Research Protocol Design, 2
RADS 604	Innovation in Health Information Technology, 2
RADS 611	Advanced Modelling Techniques, 2
RADS 605	Advanced Machine Learning, 3
RADS799/ RADS898/ RADS 698	Thesis, 48/48/12

Instructors

Prof. Ammarin Thakkinstian, Ph.D.	Asst. Prof. Chusak Okascharoen, M.D., Ph.D.
Assoc. Prof. Atiporn Ingsathit, M.D., Ph.D.	Dr. Pawin Numthavaj, M.D., Ph.D.
Assoc. Prof. Sasivimol Rattanasiri, Ph.D.	Dr. Vijj Kasemsup, M.D., Ph.D.
Assoc. Prof. Patarawan Woratanarat, MD., Ph.D.	Dr. Oraluck Pattanaprteep, Ph.D.
Asst. Prof. Sakda Arj-Ong Vallibhakara, M.D., Ph.D.	Dr. Anuchate Pattanateepapon Ph.D.
Asst. Prof. Thunyarat Anothaisintawee, M.D., Ph.D.	Dr. Ratchainant Thammasudjarit Ph.D.
Asst. Prof. Charunghai Dejthevaporn, MD., Ph.D.	Dr. Kunlawat Thadanipon, M.D. M.Sc.

Come and Join Our Team

Teamwork is what gets the job done. Imagine a large scale multi-center randomised controlled trail or a big data analytic, you will have many staffs to involve including Epidemiologist, Data Scientist, Biostatistician, Computer Scientist, content experts, and support team. The principle investigator is the leader of the team effort and that is the position we are going to put you in. You will learn how to develop research proposal which is required integrating knowledge in research methodology, Clinical Epidemiology, Biostatistics, Data Science, and other relevant areas. Conducting study complying with international ethical standard will be coached by advisers and support staffs. You will be in the driving seat and have us as a navigator taking you to achieve your goal. You are not left on your own, and we will work closely together as a team. We would like to invite you to be one of our research team. We are looking forward to work with you.

Location

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8th Floor, Medical Learning Resource Center
and Ramathibodi School of Nursing Building,

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