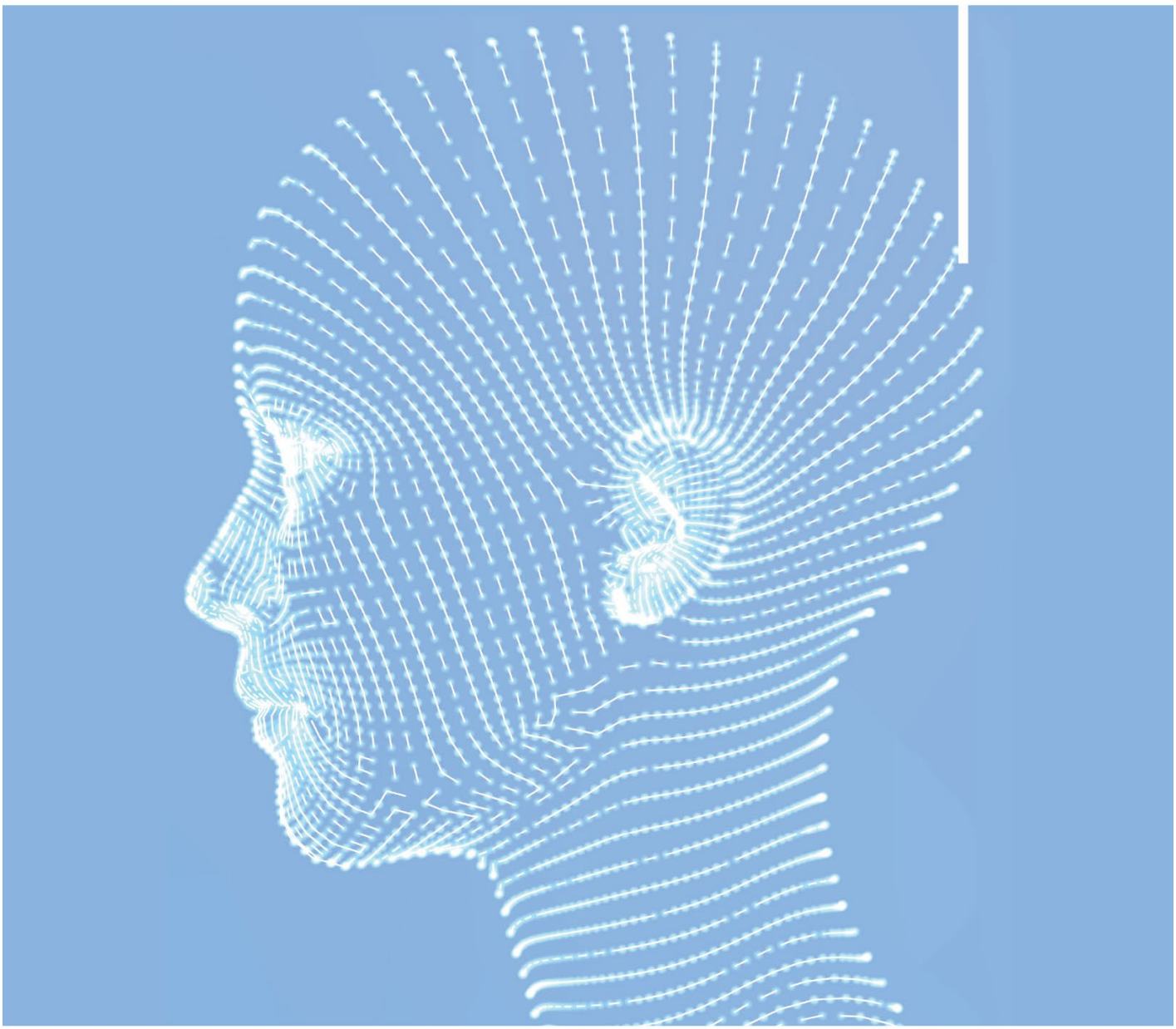
Mahidol University
Institute of
Molecular Biosciences

MBNS

HANDBOOK 2024



Neuroscience Graduate Programs 2024
(International Program)

CONTENTS

Administration

Institute of Molecular Biosciences Administrators

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Asst. Prof. Dr. Arthorn Sanpanich	Acting Deputy Director for Planning and Quality Development

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Asst. Prof. Dr. Jiraporn Panmanee	Committee Member
Assoc. Prof. Dr. Sujira Mukda	Committee Member & Secretary

Neuroscience Graduate Programs

The Graduate Program in Neuroscience at the Institute of Molecular Biosciences, Mahidol University, is the first neuroscience curriculum in Thailand established in 1987. Our students and academic staff execute cutting-edge research in diverse fields of neuroscience, ranging from cellular and molecular, to behavioral and cognitive neuroscience. By allowing our students to conduct research in multiple branches of neuroscience with guidance from expert professors and international research scholars, we ensure that our graduate students are well-rounded in both the classroom and the lab. We also value the graduate student experience by training the students in advanced transferable skil ls such as analytical thinking and information technology skills for research and communication at the international level. The program provides comprehensive coursework and research opportunities to foster breadth and depth of knowledge in neuroscience such as;

- Neurobiology and factors-related neurodegenerative diseases and aging
- Neuroinflammation induced by toxic substances, brain injury, or stress and the implication on therapeutic intervention
- Acute and chronic neurotoxicity and their effects on neuronal fates and animal behaviors
- Brain and cognitive development in children and adolescents, fetal programming of neuropsychiatric disorders, and neurodevelopmental disorders
- Factors modulating brain activities and cognitive function by measuring the electroencephalography (EEG)
- Neurobiology, neuroanatomical, neurophysiological, and cellular / molecular mechanisms of neuropsychological disorders
- Neuropsychiatric problems such as drug addiction, schizophrenia, stress, and depression.
- Molecular and physiological basis of cardiovascular diseases and neuronal injury
- Factors modulating sleep and its underlying clock gene regulation
- Structural biology of proteins and drug development for neurological and neuropsychiatric disorders
- Development of biosensor for screening neurodegenerative disorders
- Nanomaterial applications for clinical neuroscience

Education Philosophy

The M.Sc. Neuroscience Program is to generate qualified neuroscientists and experts who have strong neuroscience knowledge and research skills to serve the public and private sectors and apply neuroscience knowledge for the benefit of society and mankind.

The Ph.D. Neuroscience program is to produce doctoral graduates who achieve learning both in breadth and depth in neuroscience, possess research skills for working globally, think analytically and synthesize new knowledge systematically, possess life-long learning skills, and be able to apply neuroscience knowledge for the benefit of society and mankind.

Career Opportunities of the Graduates

M.Sc. (Neuroscience)	Ph.D. (Neuroscience)
Neuroscientist	Expert Neuroscientist
Research assistant	Researcher
Specialist in allied health sciences	Academic staff in the University
Product specialist in Neuroscience	Consultant in relevant disciplines
Product manager in Biomedical Sciences	Neuro Expert in relevant disciplines

Curriculum Structures

Master of Science Program

The M.Sc. Neuroscience curriculum consists of 24 credits of coursework and 12 credits of a research thesis. Possible transfer to the Ph.D. program after completion of the coursework with a GPAX not less than 3.5. The requested for transfer to the doctoral program will be considered by the curriculum committee on the basis of the academic performance of the applicant.

Year	Semester 1	Semester 2
1	SCID 500 Cell & Mol Biology 3(3-0-6) MBNS 600 Neurobiology 3(2-2-5) MBNS 605 Neurochemistry 2(2-0-4) Elective course not less than 4 credits **Total 12 credits**	MBNS 603 Neuropsycho Pharmacology 2(2-0-4) MBNS 650 Developmental Neuroscience 2(2-0-4) MBNS 604 Research Methodology and Techniques in Neuroscience 3(2-2-5) MBNS 608 Laboratory Rotation Training in Neuroscience 2(0-4-2) Elective course not less than 1 credit **Total 10 credits**
Year	**Semester 1**	**Semester 2**
2	MBNS 691 Seminar in Neuroscience 1(1-0-2) MBNS 698 Thesis 8(0-24-0) **Total 9 credits**	MBNS 695 Seminars in Current Research in Neuroscience 1(1-0-2) MBNS 698 Thesis 4(0-12-0) **Total 5 credits**

Doctor of Philosophy Program

The Ph.D. Neuroscience curriculum is composed of 2 study plans; Plan 1 (Dissertation only) and Plan 2 (Course works and Dissertation).

Plan 1 Research only

Plan 1.1 For students with a Master's Degree with research experience. No coursework is required, only conduct the dissertation for 48 credits.

Year	Semester 1	Semester 2
1	(Qualifying Examination) MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**	MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**
Year	**Semester 1**	**Semester 2**
2	MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**	MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**
Year	**Semester 1**	**Semester 2**
3	MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**	MBNS 898 Dissertation 8(0-24-0) **Total 8 credits**

Notes:

1) Students are encouraged to attend the Ph.D. seminar to present their thesis progress report every semester.

2) Students complete the qualifying examination within the first semester. Students must pass the qualifying examination before register the dissertation credits.

Plan 2 Coursework and research

Plan 2.1 For students holding an M.Sc. degree.

Students are expected to undertake at least 12 credits of coursework and conduct a dissertation for 36 credits. The total credits that count towards a requirement to complete the degree are 48 credits.

Year	Semester 1	Semester 2
	MBNS 610 Introductory Neuroscience (Non-credit)	
1	MBNS 753 Clinical Neuroscience 2(2-0-4) MBNS 755 Advanced Neuroscience 2(2-0-4) MBNS 790 Doctoral Seminars in Neuroscience 1(1-0-2) Elective courses 4 credits **Total 9 credits**	MBNS 794 Doctoral Seminars in Integrated Neuroscience 1(1-0-2) Elective courses 2 credits (Qualifying Examination) MBNS 699 Dissertation 4(0-12-0) **Total 7 credits**
Year	**Semester 1**	**Semester 2**
2	MBNS 699 Dissertation 8(0-24-0) **Total 8 credits**	MBNS 699 Dissertation 8(0-24-0) **Total 8 credits**
Year	**Semester 1**	**Semester 2**
3	MBNS 699 Dissertation 8(0-24-0) **Total 8 credits**	MBNS 699 Dissertation 8(0-24-0) **Total 8 credits**

Notes:

1) *Students without prior background knowledge in neuroscience must register the MBNS 610 Introductory Neuroscience as a prerequisite course before starting the first semester of the first year. The prerequisite course will not count towards a requirement to complete the degree. Students must pass the assessment criteria of that course and it will grant only the "audit (AU)" grade.*
2) *Students must pass the qualifying examination before register the dissertation credits.*

Plan 2.2 For students holding a Bachelor's Degree.

Students are expected to undertake at least 24 credits of coursework and conduct a dissertation for 48 credits. The total credits that count towards a requirement to complete the degree are 72 credits.

Year	Semester 1	Semester 2
1	MBNS 600 Neurobiology 3(2-2-5) MBNS 605 Neurochemistry 2(2-0-4) Elective courses 4 credits **Total 9 credits**	MBNS 603 Neuropsycho Pharmacology 2(2-0-4) MBNS 604 Research Methodology and Techniques in Neuroscience 3(2-2-5) MBNS 650 Developmental Neuroscience 2(2-0-4) Elective courses 2 credits **Total 9 credits**

Year	Semester 1	Semester 2
2	MBNS 753 Clinical Neuroscience 2(2-0-4) MBNS 755 Advanced Neuroscience 2(2-0-4) MBNS 790 Doctoral Seminars in Neuroscience 1(1-0-2) (Qualifying Examination) **Total 5 credits**	MBNS 794 Doctoral Seminars in Integrated Neuroscience 1(1-0-2) MBNS 799 Dissertation 8(0-24-0) **Total 9 credits**
Year	**Semester 1**	**Semester 2**
3	MBNS 799 Dissertation 10 (0-30-0) **Total 10 credits**	MBNS 799 Dissertation 10 (0-30-0) **Total 10 credits**
Year	**Semester 1**	**Semester 2**
4	MBNS 799 Dissertation 10 (0-30-0) **Total 10 credits**	MBNS 799 Dissertation 10 (0-30-0) **Total 10 credits**

Notes:

1) *Students must pass the qualifying examination before register the dissertation credits***.**

List of Courses

Prerequisite Course	Credits (lecture-Lab-Self-study)
MBNS 610 Introductory Neuroscience	1(1-0-2)
Required Courses	Credits (lecture-Lab-Self-study)
SCID 500 Cell & Molecular Biology	3(3-0-6)
MBNS 600 Neurobiology	3(2-2-5)
MBNS 603 Neuropsycho Pharmacology	2(2-0-4)
MBNS 604 Research Methodology and Techniques in Neuroscience	3(2-2-5)
MBNS 605 Neurochemistry	2(2-0-4)
MBNS 608 Laboratory Rotation Training in Neuroscience	2(0-4-2)
MBNS 650 Developmental Neuroscience	2(2-0-4)
MBNS 691 Seminars in Neuroscience	1(1-0-2)
MBNS 695 Seminars in Current Research in Neuroscience	1(1-0-2)
MBNS 753 Clinical Neuroscience	2(2-0-4)
MBNS 755 Advanced Neuroscience	2(2-0-4)
MBNS 790 Doctoral Seminars in Neuroscience	1(1-0-2)
MBNS 794 Doctoral Seminars in Integrated Neuroscience	1(1-0-2)
Elective courses	Credits (lecture-Lab-Self-study)
MBNS 606 Current Topics in Neuroscience	2(2-0-4)
MBNS 651 Neuroendocrinology	2(2-0-4)
MBNS 655 Pathogenesis of Neurological Diseases	2(2-0-4)
MBNS 658 Animal Experimentation in Neuroscience	1(0-2-1)
MBNS 659 Microtechniques in Neuroscience Research	1(0-2-1)
MBNS 751 Research Methods in Cellular and Molecular Neuroscience	2(1-2-3)
MBNS 752 Research Methods in Cognitive Neuroscience	2(1-2-3)
MBNS 754 Selected Topics in Contemporary Neuroscience	2(2-0-4)
MBNS 756 Behavioral and Cognitive Neuroscience	2(2-0-4)
MBNS 757 Drug Development for Neurological Diseases	2(1-2-3)
Dissertation	Credits (lecture-Lab-Self-study)
MBNS 698 Thesis	12(0-36-0)
MBNS 699 Dissertation	36(0-108-0)
MBNS 799 Dissertation	48(0-144-0)
MBNS 898 Dissertation	48(0-144-0)

For more details: https://mb.mahidol.ac.th/web/en/academic-neuroscience/

Course Descriptions

Prerequisite Course

Credits (lecture-Lab-Self-study)

MBNS 610 Introductory Neuroscience 1(1-0-2)

Definitions and scope of neuroscience; the basic knowledge of neuron and the nervous tissue; generations of nerve impulse; neurotransmitters and hormones; an introduction to neuroanatomy; the external structure of the central nervous system; the early development of the nervous system; basic principles of the neuroscience research.

Required Course

Credits (lecture-Lab-Self-study)

SCID 500 Cell & Molecular Biology 3(3-0-6)

Cell structure and function; life and information flow in cell, energy flow in biosystem; cell signaling; cell division; cellular differentiation; cell death and development.

MBNS 600 Neurobiology 3(2-2-5)

Current theories and laboratory practice on the human nervous system; the relationship between the nervous system and behaviors; the ultrastructure of cells in the nervous tissue; cellular functions of neurons and glial cells; electrophysiology of the neuron; supporting structures of the central nervous system; the internal organization of the spinal cord, brainstem, cerebellum, and forebrain; the motor system and the control of movement; the sensory system and special sensory organs; brain and the control of homeostasis; emotion and motivation; memory and learning; higher cognitive functions of the cerebrum, language and the executive function; the evolution of the nervous system.

MBNS 603 Neuropsycho Pharmacology 2(2-0-4)

Drug actions on the nervous system comprising areas of the investigation of critical importance to science and medicine; the mechanisms by which drugs alter brain functions; medications used to treat a wide range of neurological and psychiatric disorders as well as drugs of abuse.

MBNS 604 Research Methodology and Techniques in Neuroscience 3(2-2-5)

The principles and methods used in the research process in neuroscience; fundamental skills required to assess the data generation and collecting; research ethics; research strategy and design; research practice; writing up research proposals; data analyses and interpretation; and presentations of the research results**.**

MBNS 605 Neurochemistry 2(2-0-4)

Principles of the chemical transmission; the second messenger; the signaling transduction; neurotransmitters; neurotransmitter receptors; the nuclear hormone receptor signaling; advances in the neuronal stem cells research and the molecular modeling for neuroscience.

MBNS 608 Laboratory Rotation Training in Neuroscience 2(0-4-2)

Rotation training in different neuroscience's laboratories; experimental design; performing experiments with research ethics awareness; analyzing and interpreting the experimental data; presentations of the results via a short seminar; research report.

MBNS 650 Developmental Neuroscience 2(2-0-4)

Current concepts concerning the cellular and molecular mechanisms of the brain development e.g., the neural induction and neurulation; the neural patterning; the neurogenesis; the neural determination and differentiation; the neural migration and cortical lamination; the axonal growth and guidance; the synapse formation and refinement; the programmed cell death; Roles of neurotrophic factors in brain development; the development of interneurons; the development of glial cells; the development of the neural crest; neural regeneration and repair; the neural correlate of the behavioral development; and factors affecting the brain development.

MBNS 691 Seminars in Neuroscience 1(1-0-2)

Presentations and discussions articles from technical journals; the content area of the thesis conduction in neuroscience; morality and ethics of being a neuroscientist.

MBNS 695 Seminars in Current Research in Neuroscience 1(1-0-2)

Presenting and discussing articles about the current research in neuroscience; the research articles integration; the correlation of selected research topics with the thesis research.

MBNS 753 Clinical Neuroscience 2(2-0-4)

The classification of neurological and psychiatric diseases; symptomatology of neurological diseases; headache and the migraine headache; common neurological diseases in children and adults; brain developmental disorders; common psychiatric diseases; schizophrenia; mood disorders; the neurological examination; electroencephalography; psychiatric interviews and the mental status examination; neuropsychological tests; consciousness and its disorder; the sleep medicine.

MBNS 755 Advanced Neuroscience 2(2-0-4)

Advanced knowledge and cutting-edge tools for neuroscience research; tracking advancements and shifting trends knowledge in neuroscience; the novel research ideas from discussion and presentation by acknowledging proper resources and using accurate citation.

MBNS 790 Doctoral Seminars in Neuroscience 1(1-0-2)

Searching and gathering advanced knowledge in neuroscience in the field of interest; Practice scientific presentation skills; Ethics in research citation.

MBNS 794 Doctoral Seminars in Integrated Neuroscience 1(1-0-2)

Integrate knowledge from a variety of neuroscience disciplines to develop a future research question; Practice scientific presentation skills; Ethics in research citation.

Elective Course

Credits (lecture-Lab-Self-study)

MBNS 606 Current Topics in Neuroscience 2(2-0-4)

Interpretations; critical reviews and discussions of recent special articles, reviewing articles or research articles related to the current knowledge and technology in neuroscience.

MBNS 651 Neuroendocrinology 2(2-0-4)

Theoretical and experimental studies of the relationships between the nervous system and the endocrine glands; neural controls of endocrine functions; endocrine and hormonal influences on the development and function of the nervous system and their behavioural correlates to organs.

MBNS 655 Pathogenesis of Neurological Diseases 2(2-0-4)

Mechanism of neurological diseases; inflammation; neural and glia response to the injury; the pathological investigation; brain edema and hydrocephalus; neurogenetic diseases; aging and neurodegenerative diseases; autoimmune diseases of the control nervous the system; the cerebrovascular disease; the brain tumor; the CNS infection; the congenital control nervous the system malformation; brain and spinal cord injuries; toxic and metabolic diseases of the nervous system; neurocutaneous syndromes; clinico-pathological correlation.

MBNS 658 Animal Experimentation in Neuroscience 1(0-2-1)

Practice animal research techniques in neuroscience, ethical conduct following animal ethic rules, comprehensive knowledge in animal research techniques to solve scientific research questions.

MBNS 659 Microtechniques in Neuroscience Research 1(0-2-1)

Practical sessions of the paraffin method, cryosectioning and immunohistochemical techniques; the analyses and discussions of results.

MBNS 751 Research Methods in Cellular and Molecular Neuroscience 2(1-2-3)

The in-depth knowledge of the research design and methods used in the cellular and molecular neuroscience research; the experimental design, data analyses and interpretations; presentations of the research results; techniques to analyze the anatomical and chemical changes of the cells, proteins, or genes in the nervous system.

MBNS 752 Research Methods in Cognitive Neuroscience 2(1-2-3)

Principles and methods used in the cognitive neuroscience; electro-encephalography; the evoked potential; the event-related potential; the quantitative electroencephalography (EEG); the enterprise resource planning (ERP) waveforms; human executive functions; methods for assessing the executive function control nervous system (EF); neuroimaging; neuropsychological tasks; cognitive tasks for higher brain functions; medical ethics.

MBNS 754 Selected Topics in Contemporary Neuroscience 2(2-0-4)

An independent study on selected topics of the contemporary neuroscience research, related to neurological and mental health problems; effects of the brain and behaviors in children; aging of the brain and the neurodegeneration such as Alzheimer’s disease; substance

abuses; the stress and stress management; new innovative technologies in the neuroscience research; developing concept papers and giving presentations to the class.

MBNS 756 Behavioral and Cognitive Neuroscience 2(2-0-4)

An association among the brain, the mind, and the behaviors; neurobiology of the cognition; genetic and molecular aspects of cognitive functions; animal models for behavioral studies; an assessment of animal behaviors; psychopathology; electro-encephalography and event-related potentials (ERP); neuropsychological tests; neuroimaging; the human cognition; executive functions; the social behaviors and social cognition; the multiple intelligence.

MBNS 757 Drug Development for Neurological Diseases 2(1-2-3)

The fundamentals of drug development and discovery; drug targets relevant to neurological and neuropsychiatric diseases; biomarker identification in neurological diseases; the concepts and strategies of target identification and validation in drug development; the principles of target-based screening in computer-aided drug design; bioinformatics tools for drug developments; lead identification and optimization; various classes of therapeutic agents; Legal and Ethical Issues in Drug Development.

Thesis and Dissertation

Credits (lecture-Lab-Self-study)

MBNS 698 Thesis 12(0-36-0)

Identifying research proposals; conducting research with a concern of research ethics; data collections; analyses; interpretating of the results and reporting the results in terms of theses; presenting and publishing research in standard journals or conference's proceedings

MBNS 699 Dissertation 36(0-108-0)
MBNS 799 Dissertation 48(0-144-0)
MBNS 898 Dissertation 48(0-144-0)

Identifying research proposal; conducting research with concern of research ethics; data collections, analyses, interpreting of results and reporting results in terms of dissertations; presenting and publishing research in international peer-reviewed journals, ethics in the dissemination of research results.

Faculty Members

Teaching Staff	Internal phone	Research interests
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Appendices

Program Learning Outcomes (PLOs)

Master of Science Program

PLO1 Comprehend an appropriate ethical code of conduct, moral responsibility, and academic regulation in scientific experimentation.

PLO2 Understand the neuroscience aspect of human behavior and mental health.

PLO3 Apply neuroscientific knowledge and integrate knowledge to solve new scientific problems.

PLO4 Implement leadership skills and be capable of working collaboratively with members as a team.

PLO5 Demonstrate effective transferable skills including basic statistical analysis, communication, information technology for searching, processing, compiling, analyzing, and presenting data.

Doctor of Philosophy Program

PLO1 Demonstrate ethical code of conduct, moral responsibility, and follow the ethical regulation in neuroscience research.

PLO2 Possess depth and breadth knowledge, and capable of tracking the shifting trend in neuroscience.

PLO3 Synthesize new neuroscientific knowledge and integrate knowledge to solve the neurological, behavioral, and mental health issues.

PLO4 Perform effectively as a leader and member of the teamwork.

PLO5 Demonstrate advanced transferable skills comprising the mathematical analytical thinking and information technology skills for research and communication at the international-level.

Curriculum Mapping

Master of Science Program

Code	Course title	Credits	PLOs				
			1	2	3	4	5
Prerequisite Courses							
MBNS 610	Introductory Neuroscience	1(1-0-2)	I	I	I	I	I
Required courses							
SCID 500	Cell & Molecular Biology	3(3-0-6)	I	I	I	I	I
MBNS 600	Neurobiology	3(2-2-5)	I	I	I	I	I
MBNS 603	Neuropsycho Pharmacology	2(2-0-4)	R	R	R	R	R
MBNS 604	Research Methodology and Techniques in Neuroscience	3(2-2-5)	R	P	P	P	P
MBNS 605	Neurochemistry	2(2-0-4)	I	R	R	R	R
MBNS 608	Laboratory Rotation Training in Neuroscience	2(0-4-2)	P	P	P	P	P
MBNS 650	Developmental Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 691	Seminars in Neuroscience	1(1-0-2)	P	P	P	P	P
MBNS 695	Seminars in Current Research in Neuroscience	1(1-0-2)	P	P	P	P	P
Elective courses							
MBNS 606	Current Topics in Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 658	Animal Experimentation in Neuroscience	1(0-2-1)	P	P	P	P	P
MBNS 659	Microtechniques in Neuroscience Research	1(0-2-1)	P	P	P	P	P
MBNS 651	Neuroendocrinology	2(0-4-2)	R	R	R	R	R
MBNS 655	Pathogenesis of Neurological Diseases	2(2-0-4)	R	R	R	R	R
Thesis							
MBNS 698	Thesis	2(0-36-0)	M	M	M	M	M

Notes:
I = ELO is introduced & assessed
R = ELO is reinforced & assessed
P = ELO is practiced & assessed
M = Level of Mastery is assessed

Doctor of Philosophy Program

Plan 1

Code	Course title	Credits	PLOs				
			1	2	3	4	5
Dissertation							
MBNS 898	Dissertation	48(0-144-0)	M	M	M	M	M

Plan 2.1

Code	Course title	Credits	PLOs				
			1	2	3	4	5
Prerequisite Course							
MBNS 610	Introductory Neuroscience	1(1-0-2)	I	I	I	I	I
Required Courses							
MBNS 753	Clinical Neuroscience	3(3-0-6)	R	R	R	R	R
MBNS 755	Advanced Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 790	Doctoral Seminars in Neuroscience	1(1-0-2)	P	P	P	P	P
MBNS 794	Doctoral Seminars in Integrated Neuroscience	1(1-0-2)	P	P	P	P	P
Elective Courses							
MBNS 751	Research Methods in Cellular and Molecular Neuroscience	2(1-2-3)	P	P	P	P	P
MBNS 752	Research Methods in Cognitive Neuroscience	2(1-2-3)	P	P	P	P	P
MBNS 754	Selected Topics in Contemporary Neuroscience	2(2-0-4)	P	P	P	P	P
MBNS 756	Behavioral and Cognitive Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 757	Drug Development for Neurological Diseases	2(1-2-3)	R	P	P	R	P
Dissertation							
MBNS 699	Dissertation	36(0-108-0)	M	M	M	M	M

Notes:

I = ELO is introduced & assessed
R = ELO is reinforced & assessed
P = ELO is practiced & assessed
M = Level of Mastery is assessed

Plan 2.2

Code	Course title	Credits	PLOs				
			1	2	3	4	5
Required Course							
MBNS 600	Neurobiology	3(2-2-5)	I	I	I	I	I
MBNS 603	Neuropsycho Pharmacology	2(2-0-4)	R	R	R	R	R
MBNS 604	Research Methodology and Techniques in Neuroscience	3(2-2-5)	R	P	P	P	P
MBNS 605	Neurochemistry	2(2-0-4)	I	R	R	R	R
MBNS 650	Developmental Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 753	Clinical Neuroscience	3(3-0-6)	R	R	R	R	R
MBNS 755	Advanced Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 790	Doctoral Seminars in Neuroscience	1(1-0-2)	P	P	P	P	P
MBNS 794	Doctoral Seminars in Integrated Neuroscience	1(1-0-2)	P	P	P	P	P
Elective Courses							
MBNS 606	Current Topics in Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 651	Neuroendocrinology	2(2-0-4)	I	P	P	P	P
MBNS 655	Pathogenesis of Neurological Diseases	2(2-0-4)	R	R	R	R	R
MBNS 751	Research Methods in Cellular and Molecular Neuroscience	2(1-2-3)	P	P	P	P	P
MBNS 752	Research Methods in Cognitive Neuroscience	2(1-2-3)	P	P	P	P	P
MBNS 754	Selected Topics in Contemporary Neuroscience	2(2-0-4)	P	P	P	P	P
MBNS 756	Behavioral and Cognitive Neuroscience	2(2-0-4)	R	R	R	R	R
MBNS 757	Drug Development for Neurological Diseases	2(1-2-3)	R	P	P	R	P
Dissertation							
MBNS 799	Dissertation	36(0-108-0)	M	M	M	M	M

Notes

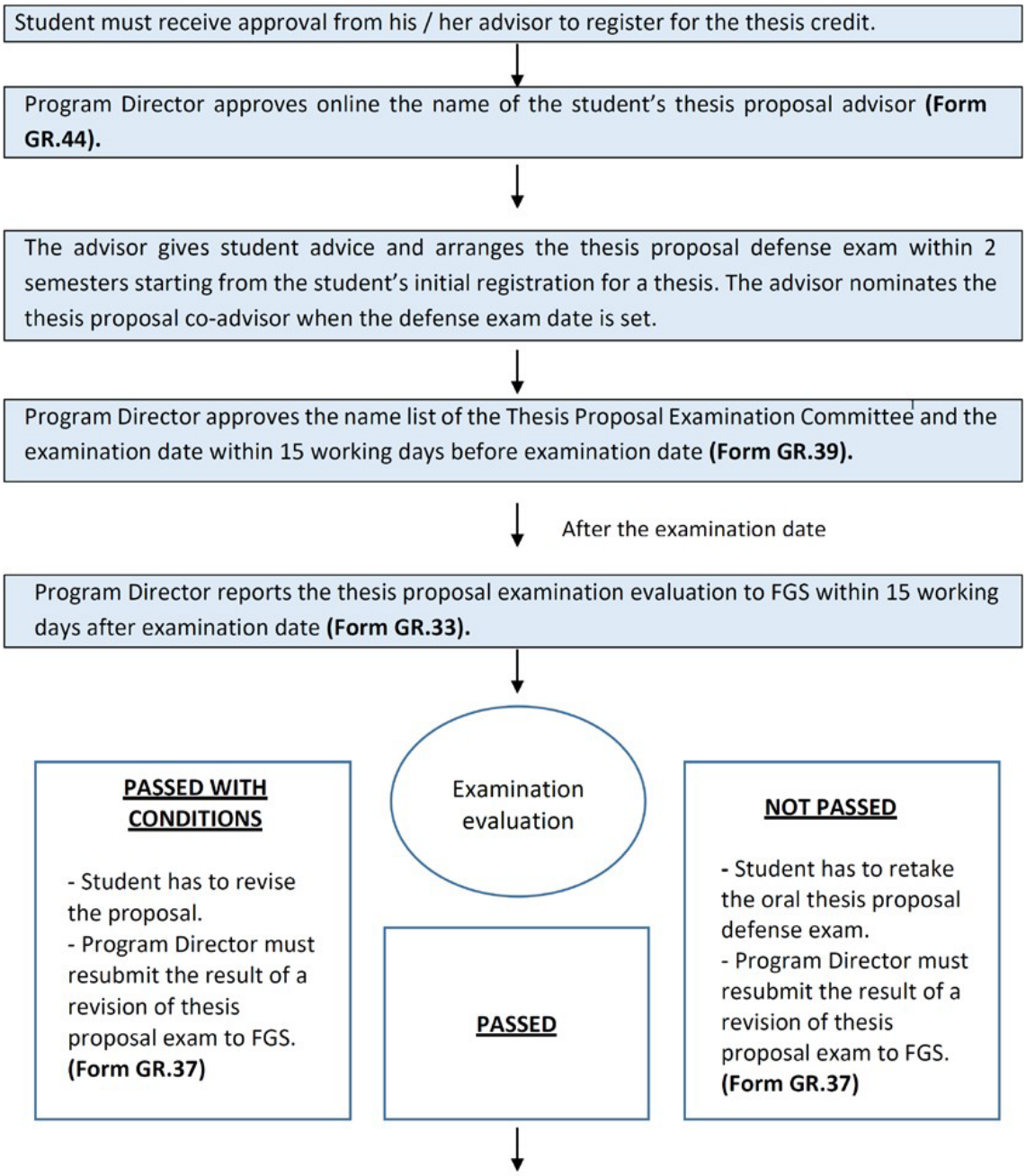
I = ELO is introduced & assessed

R = ELO is reinforced & assessed

P = ELO is practiced & assessed

M = Level of Mastery is assessed

Steps for Thesis Process
(Master's Degree Program)



[1] Number of committee members is at least 3 members, the chair of the committee must be a thesis proposal advisor, and the member must be a regular instructor or external examiner.

↓

Program Director approves the name list of the Thesis Advisory Committee[2] and the thesis title **(Form GR.1).**

↓

Student must report his/her progress and research performance to the Thesis Advisory Committee, to assess the progress in research performance and gives the result P/S/U to Program Director and Dean of FGS every semester until the thesis is completed **(Form GR 42).**

↓

Changes in the thesis title and the advisory committee can be done by submitting the request to the major advisor, Program Director and Dean of FGS **(Form GR.49 Requirements for Thesis Revision Form).**

↓

Student who is qualified to take the thesis defense examination must submit the thesis manuscript and abstract written in the approved language, to the Thesis Defense Committee for reading at least 15 working days before the examination date.

↓

Program Director will approve the examination date and the name list of the Thesis Defense Committee[3] for appointment **(Form GR 2).**

↓

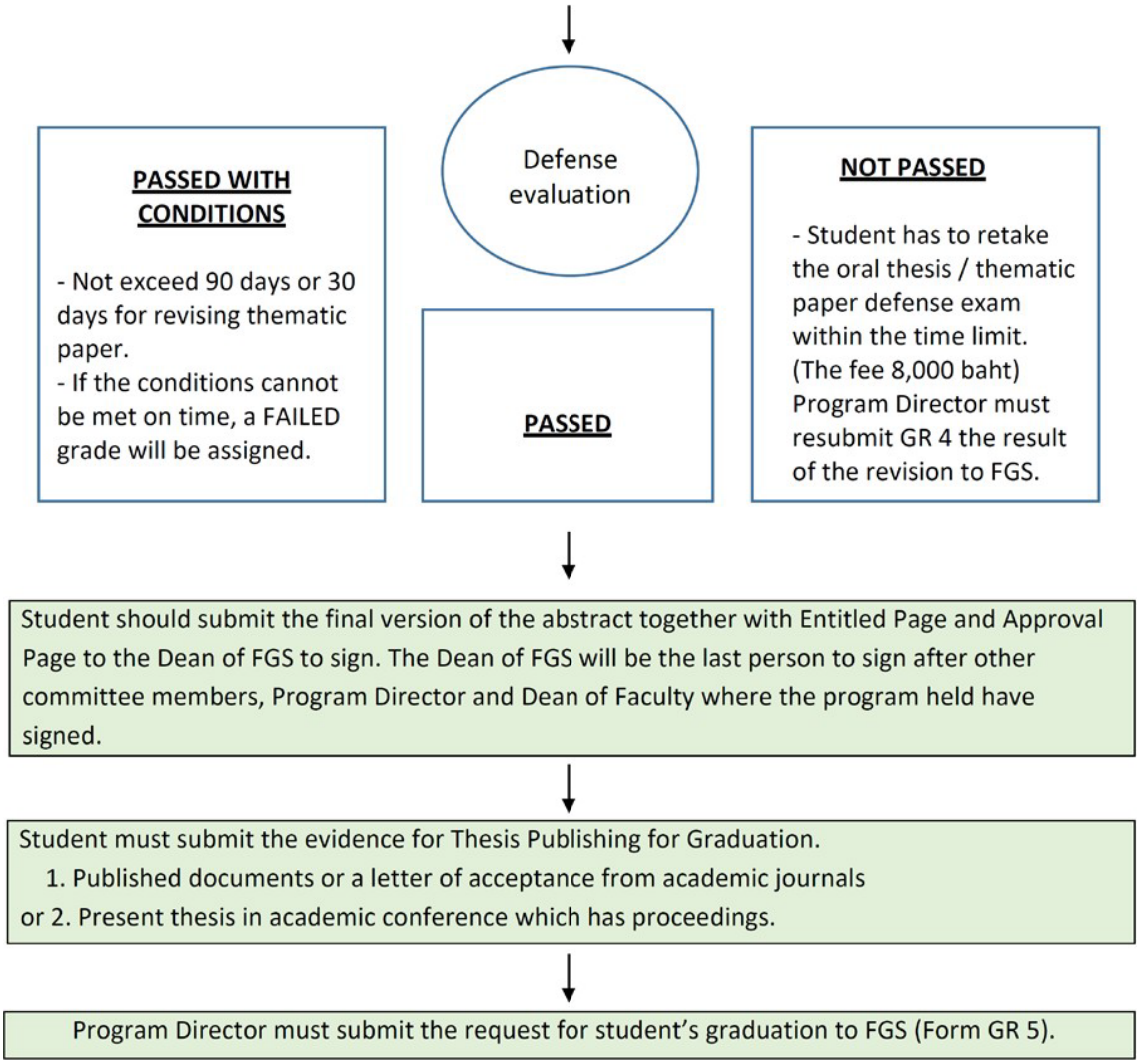
The Chair of the Defense Committee must finalize the exam result of the thesis

• The chair of the defense committee must inform the student of the result of the thesis defense exam, in written form within 5 working days after examination date and submit that result to the Dean of FGS via the Program Director within 15 working days after examination date **(Form GR.3).**

↓

[2] The Thesis Committee consists of at least 3 committee members
(1) major advisor (2) at least two co-advisors who are regular instructor or external person with Ph.D degree or have at least an academic title of no less than an associate professor.

[3] The Thesis Defence Examination Committee consists of at least 3 committee members (1) major advisor (2) at least one external examiner and (3) co-advisor or a program instructor.


Defense evaluation
PASSED WITH CONDITIONS
- Not exceed 90 days or 30 days for revising thematic paper.
- If the conditions cannot be met on time, a FAILED grade will be assigned.
PASSED
NOT PASSED
- Student has to retake the oral thesis / thematic paper defense exam within the time limit. (The fee 8,000 baht) Program Director must resubmit GR 4 the result of the revision to FGS.
Student should submit the final version of the abstract together with Entitled Page and Approval Page to the Dean of FGS to sign. The Dean of FGS will be the last person to sign after other committee members, Program Director and Dean of Faculty where the program held have signed.
Student must submit the evidence for Thesis Publishing for Graduation.
1. Published documents or a letter of acceptance from academic journals
or 2. Present thesis in academic conference which has proceedings.
Program Director must submit the request for student's graduation to FGS (Form GR 5).

Steps for Thesis Process
(Doctoral Degree Program)

Program Director submits the name list of the Qualifying Examination Committee consisting of 4 members and sets up the examination date to FGS within 15 working days before examination date **(Form GR.35)**.

↓ After the examination date

Program Director reports the Qualifying exam evaluation to FGS within 15 working day after examination date **(Form GR.38)**.

↓ Student registers for the thesis credit after receiving the approval

Program Director approves the name of the student's thesis proposal advisor **(Form GR.44)**.

↓

The thesis proposal advisor gives student advice and arranges the thesis proposal defense exam (within 2 semesters starting from the student's initial registration for a thesis). The thesis proposal advisor nominates the thesis proposal co-advisors when the defense exam date is set.

↓

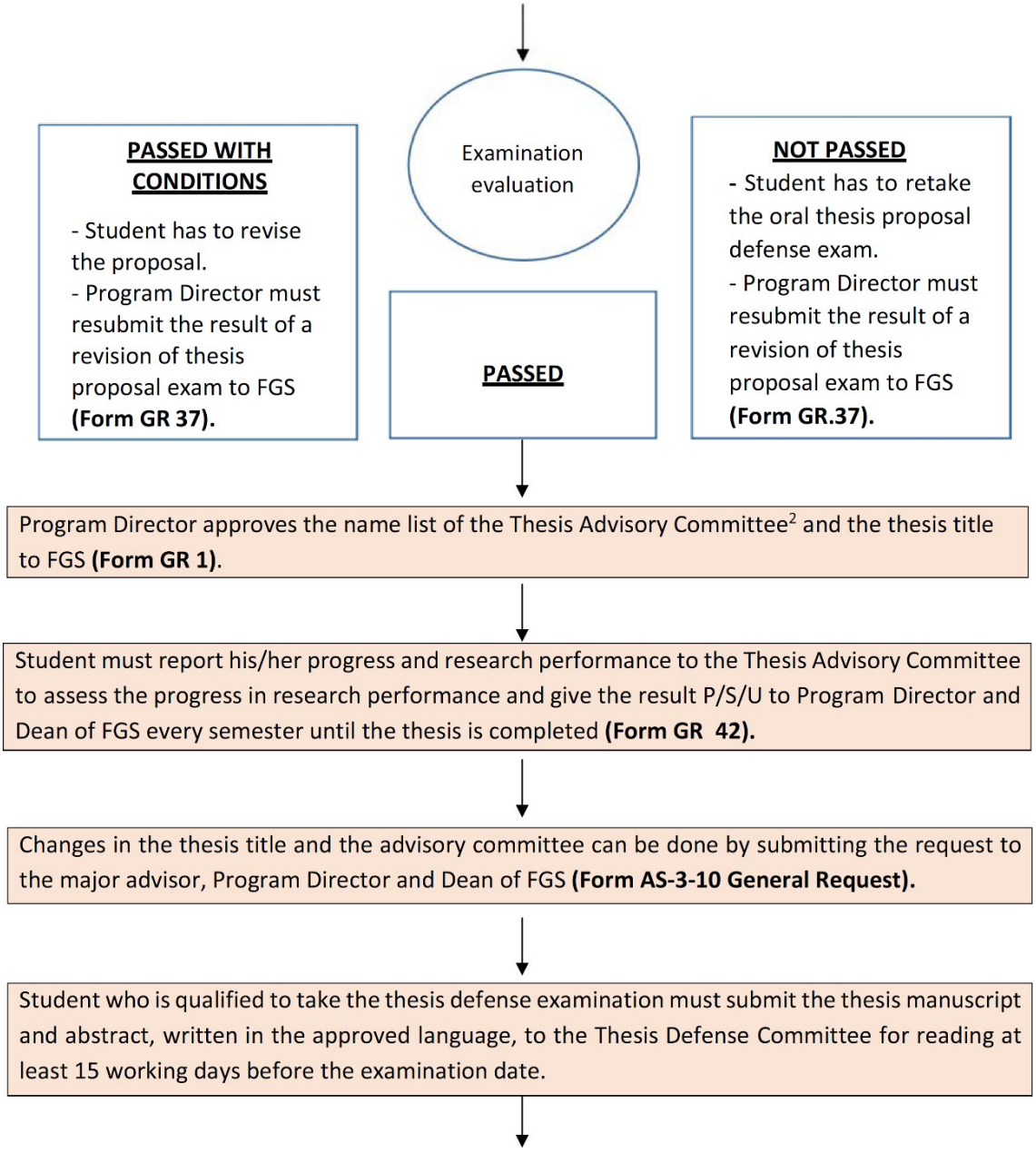
Program Director approves the name list of the Thesis Proposal Examination Committee[1] and the examination date within 15 working days before examination date **(Form GR.39)**.

↓ After the examination date

Program Director reports the thesis proposal examination evaluation to FGS within 15 working days after examination date **(Form GR.33)**.

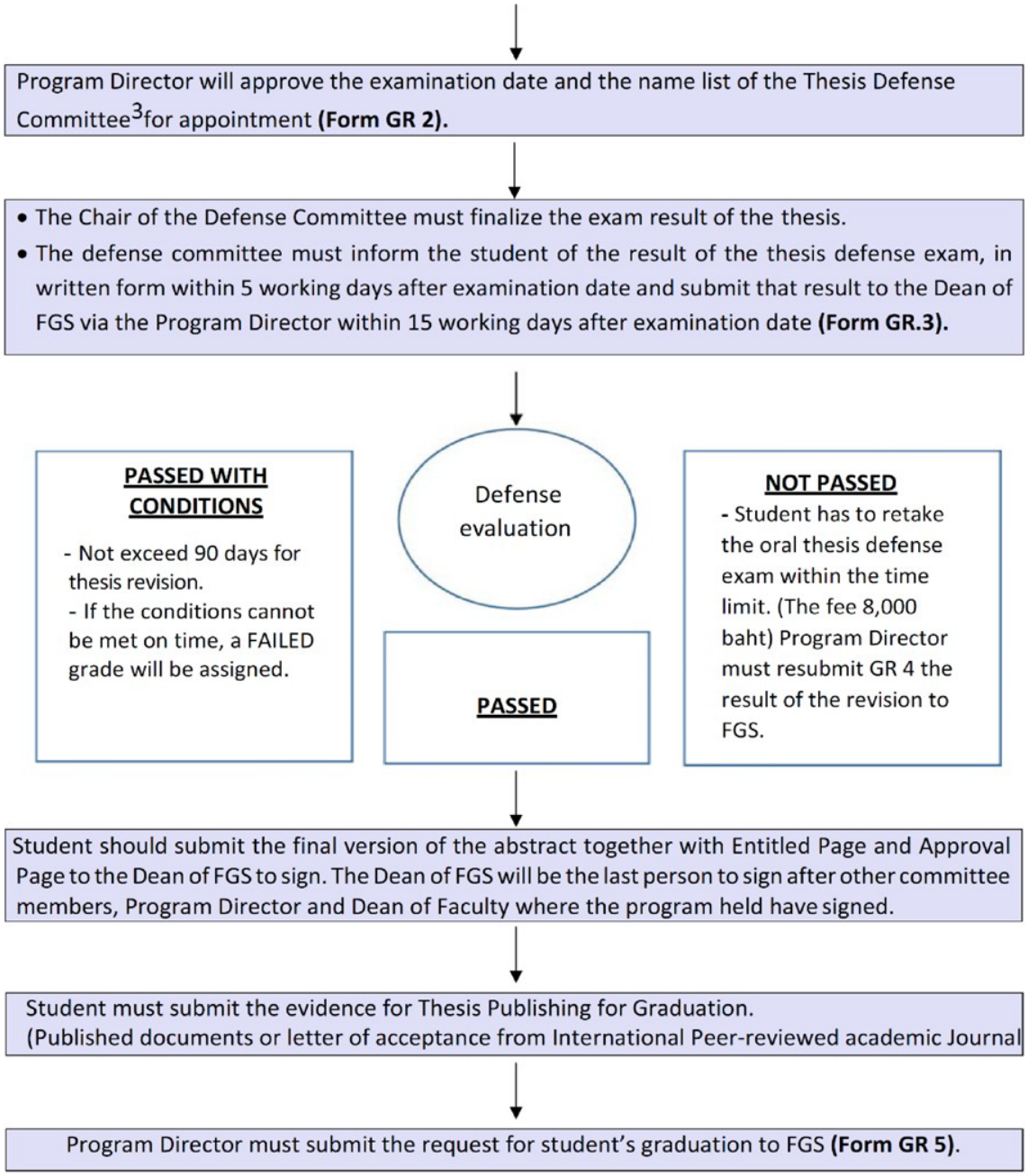
↓

[1] Number of committee members is at least 4 members. The chair of the committee must be a thesis proposal advisor, and the member must be a regular instructor or external examiner.



[2] The Thesis Committee consists of at least 4 committee members

(1) major advisor (2) at least three co-advisors who are regular instructor or external person with Ph.D degree or have at least an academic title of no less than an associate professor.



[3] The Thesis Defense Examination Committee consists of at least 5 committee members (1) major advisor (2) at least one external examiner as the chair and (3) co-advisors or program instructors.

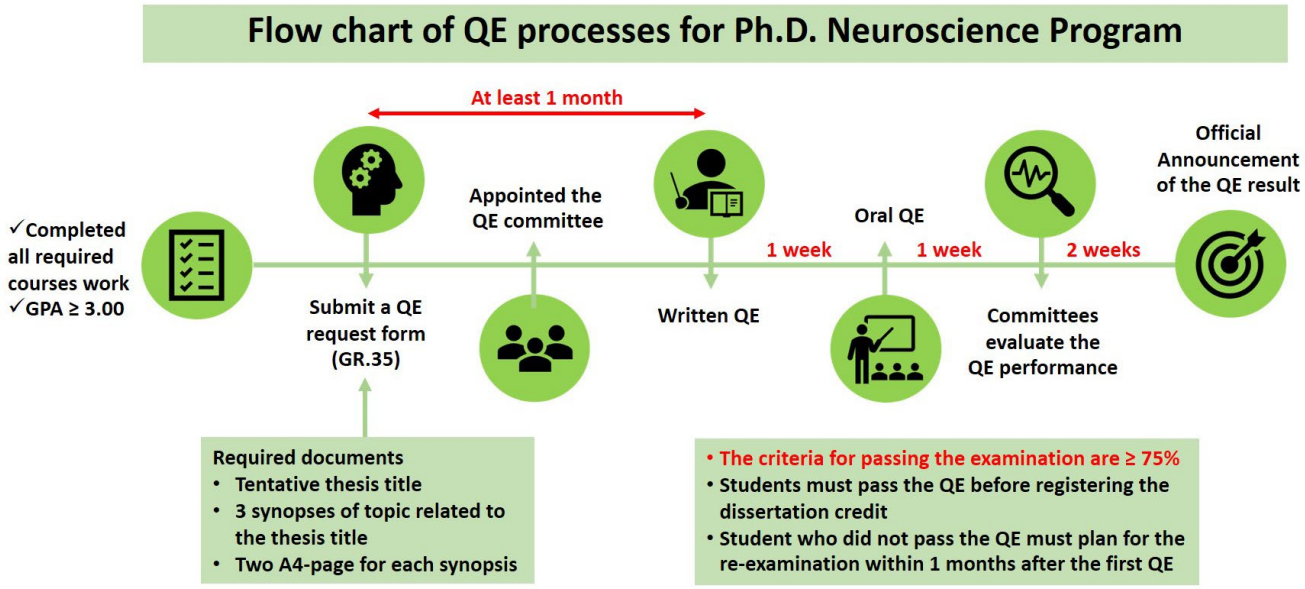
Guidelines for the Qualifying Examination

Ph.D. Program in Neuroscience,
Research Center for Neuroscience,
Institute of Molecular Biosciences, Mahidol University

Ph.D. students are required to take a Qualifying Examination (QE) within the first year of graduate work (for Plan 1) or the second year (for Plans 2.1 and 2.2). The Qualifying Examination comprises both written and oral components that cover recent knowledge in multidisciplinary fields of neuroscience such as neurobiology, neurochemistry, neuropharmacology, neuroendocrinology, neuropathology, clinical neuroscience, developmental neuroscience, or other emerging trends in the neuroscience field, if related (such as computational neuroscience, machine learning, brain-computer interfaces, neuroeconomics, neuroeducation, etc.). The purpose of the QE is to assess the student's ability to integrate knowledge from these multidisciplinary fields to develop research questions and possible research approaches. The outcome of the QE indicates the student's readiness to undertake their research thesis.

The QE is divided into two parts: Written QE and Oral QE. The written QE is divided into six questions that must be completed within 2 days, each question worth 20 points. The total score for both sessions is 120 points. The QE committee will evaluate the student's answers using a marking scheme for all key points. The written QE score will be weighted as 60% of the total score. Within one week after the written exam, the written QE scores will be reported to students via individual email. The oral examination will be conducted within one week after the written exam, and the oral QE score, total 30 points, will be weighted as 40%. To pass the QE, a student must achieve a total score of at least 75%. Please note that passing the QE is a prerequisite for Ph.D. students to register for dissertation credits.

If you have any questions regarding your QE scores, please send an email to the Chairperson of the Qualifying Examination Committee (refer to the Administrative Order of the Faculty of Graduate Studies: Subject Appointing the Qualifying Examination Committee).


Flow chart of QE processes for Ph.D. Neuroscience Program
At least 1 month
✓Completed all required courses work
✓GPA ≥ 3.00
Submit a QE request form (GR.35)
Appointed the QE committee
Written QE
1 week
Oral QE
1 week
Committees evaluate the QE performance
2 weeks
Official Announcement of the QE result
Required documents
• Tentative thesis title
• 3 synopses of topic related to the thesis title
• Two A4-page for each synopsis
• The criteria for passing the examination are ≥ 75%
• Students must pass the QE before registering the dissertation credit
• Student who did not pass the QE must plan for the re-examination within 1 months after the first QE

Guidelines for Thesis Examination and Graduation
Institute of Molecular Biosciences Mahidol University

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This announcement is to ensure that the post-graduate programs of the Institute of Molecular Biosciences are moving in the same direction and conform to the standard criteria for graduate studies of the Office of the Higher Education Commission. By the virtue of section 37 of Mahidol University Act B.E. 2550 and with the resolution of the Institute of Molecular Biosciences Administrative Committee in the meeting no. 46–9/2563 on 3rd September B.E. 2563, and the Institute of Molecular Biosciences Committee in the meeting no. 53–4/2564 on 19th April B.E. 2564, the Director of the Institute of Molecular Biosciences stipulated the following guidelines

1. Guidelines for getting students to publish research articles within a time frame after their thesis defense

1.1 Master program:

Student must have presented at least a peer-reviewed proceeding at an academic conference before s/he can schedule for a thesis defense examination.

1.2 Doctoral programs:

Plan 1 and plan 2.1 and 2.2 that require 2 papers for graduation (e.g. RGJ students)

Student must have submitted the first manuscript ("under review" status), and the draft of the second manuscript must be submitted to the Curriculum Executive Committee for approval before appointing the thesis defense committee. Both manuscripts must be accepted for publication within 1 year of the passing date of the defense examination. The progress of the manuscripts shall be reported to the Program Executive Committee every 3 months.

/Plan 2.1...

Plan 2.1 and 2.2

Student must have submitted a manuscript ("under review" status) before setting up his/her thesis defense examination. The manuscript must be accepted for publication within 1 year of the passing date of the examination. The progress of the manuscript shall be reported to the Program Executive Committee every 3 months.

*The manuscript must be submitted to a journal approved by the Faculty of Graduate Studies, and in the case whereby the student receives a scholarship, the funding agency's as well.

The above guideline shall apply to all students enrolled in the revised curriculum

2. Guidelines for getting students to complete their studies according to the structure of the programs.

In order to standardize and monitor the progress of students' thesis, the Program Director/Program Secretary or a person assigned by the Curriculum Executive Committee will attend and observe the assessment of the student's thesis progress and research performance, but will not be involved in the thesis evaluation. However, he or she can give feedbacks to the Program Director in cases whereby the students are unlikely or unable to graduate according to the time frame of the program structure.

3. The responsibility of major advisor

Any major advisor who has Ph.D. students or M.Sc. students under the extension of their study period according to the program structure will not be allowed to accept any more students in that program.

Any exception to the above requirements shall be under the discretion of the Program Executive Committee.

This announcement shall be effective from now onwards

Announced on May, 12 B.E. 2564

(Prof. Narattaphol Charoenphandhu, M.D., Ph.D.)

Director, Institute of Molecular Biosciences

Professional and Personal Skills Development

Policies of the Faculty of Graduate Studies

- Graduate students must pass the Professional and Personal Skills Development to qualify for graduation. Every candidate student must pass at least 1 activity in each required skill.
- The activity students take part in will be reported in their transcript.
- Students will get a certificate for every activity attended.
- Students can register for the activities through the website which will have a schedule of activities for the students to choose.
- If the students' program has activities or courses that are similar to the required skills in this project, they can send a request form to the student affairs committee under the committee's agreement meeting will be held every 2 months.
- The maximum of comparable skills in the students' program are 2 skills, one of which the student shall take in the Faculty of Graduate Studies.

These are the standard professional and personal skills that required for graduation;

- Communication and Language Skills
- Leaderships and Management skills
- Digital Literacy Skills
- Creative and Innovative Skills (For students with ID 61 onwards)
- Health Literacy Skills (For students with ID 62 onwards)
- Entrepreneurial Literacy Skills (For students with ID 62 onwards)

Online Learning Platform

The Faculty of Graduate Studies (FGS) has launched a new portal of study using “Coursera”, the online learning platform for MOOC and specialization courses. Through this, Mahidol University students are able to do a self-study for various online courses offering in the Coursera system. The courses are free and you will receive the certificate of completion on successful completion of the course. As a Mahidol University student, you do not need to pay for receiving the completion Certificate (Verified Certified Certificate)* from Coursera.

For graduate student to fulfil soft skill requirement, you are suggested to join this study portal “Coursera” since some courses in Coursera are relevant to fulfil the “Soft Skills” requirements for graduate students of Mahidol University. The Faculty of Graduate Studies has selected some of the courses and listed for the Mahidol University graduate students to fulfil soft skills requirement, even though graduate students can join other courses in addition to soft skill related courses.

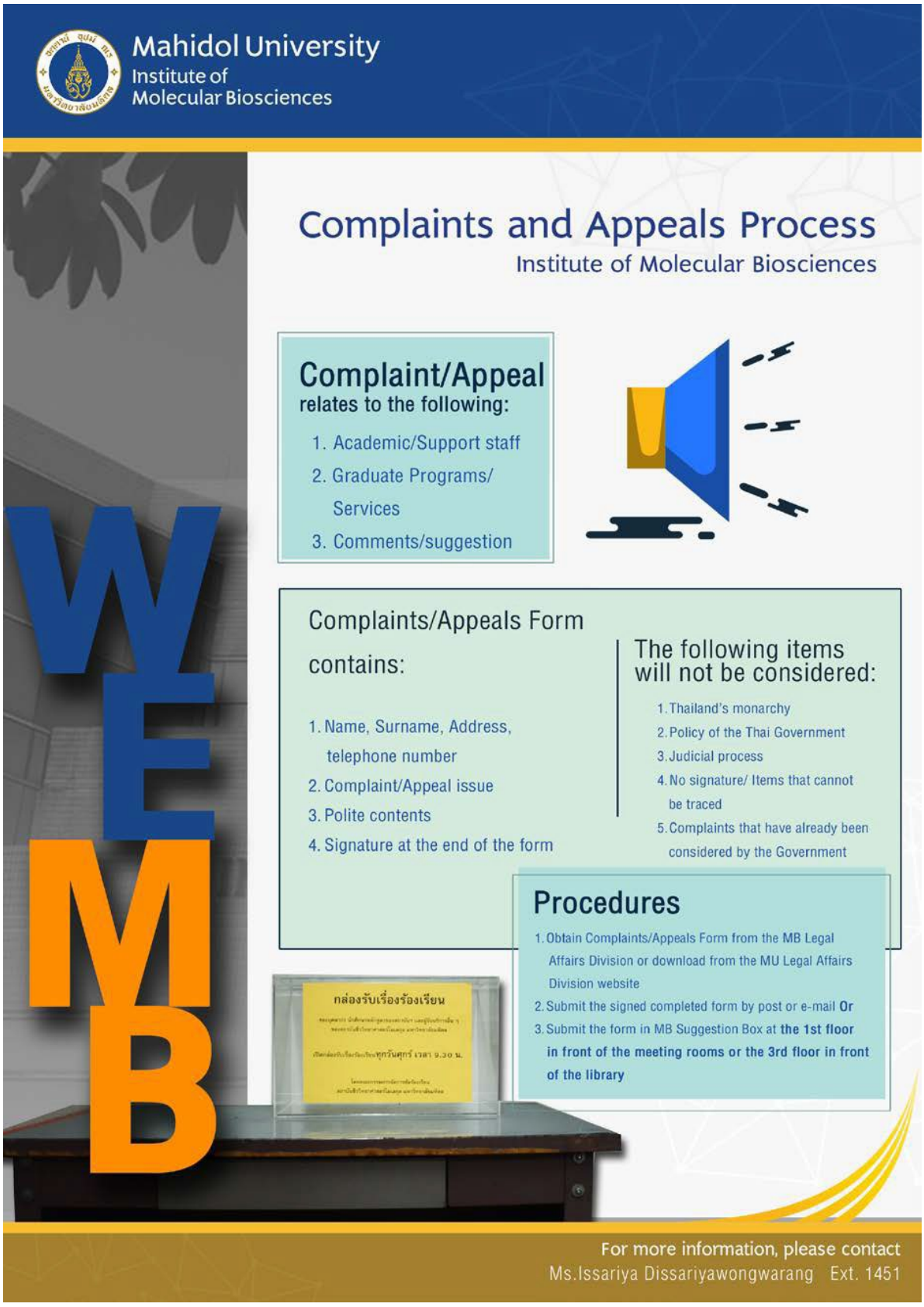
**Usually the verified certificate from Coursera cost 49$ on average per course. But as a Mahidol University students, you are not required to pay for this to receive the Certificate.*


Mahidol University
Faculty of Graduate Studies
HUMAN CAPACITY DEVELOPMENT SECTION
Free Course Online
coursera
for Campus
Free!! Build up your soft skills with Coursera
You can learn online courses from world-class universities and companies to fulfill the soft skills requirement of Mahidol University.
How to register
Fill-in the Google Forms via the QR code:
* Please use the same email that you made registration in Coursera.
Lecturer
Student/Alumni
For more information, please contact
softskillsgradmu@gmail.com
* Terms and conditions apply
You will receive information by email
Register Now
First come, First served

Course Registration and Fee Payment for Graduate Students, Academic Year 2024
Faculty of Graduate Studies, Mahidol University

	Registration Process	1st Semester	2nd Semester	Summer
1	Semester start and end dates	Aug 5 – Nov 29, 2024	Jan 6 - May 2, 2025	May 26 - Jul 18, 2025
2	Consultations with advisors for course registration approval (Regarding course registrations deviating from study plans, a request must be approved prior to registration)	From Jun 17, 2024	From Nov 18, 2024	From Apr 21, 2025
3	Registration period via Student Service System on https://graduate.mahidol.ac.th and registration fee payment 3.1 Regular registration	Jul 1 - Jul 12, 2024	Dec 2 - Dec 13, 2024	May 5 - May 9, 2025
	3.2 Last day of payment for tuition fees during the regular registration period (If the payment is made after this deadline, the students will be charged 2,000 baht for late registration.)	Aug 2, 2024 (before 10:00 p.m.)	Jan 3, 2025 (before 10:00 p.m.)	May 23, 2025 (before 10:00 p.m.)
	3.3 Late registration (The students will be charged for 2,000 baht)	Aug 5 - Aug 16, 2024	Jan 6 - Jan 17, 2025	May 26 - May 30, 2025
	3.4 Add/Drop course registration (Tuition fee refund for course dropping excluding student ID 67 who paid tuition fees in a lump sum cannot refund)			
	3.5 Submission of credit refund request form for the dropped course(s) (during Add/Drop registration period) Remarks: The refund request must be proceeded within the specified period. All requests submitted after the specified period will not be considered.	Aug 5 - Aug 30, 2024	Jan 6 - Jan 31, 2025	May 26 - Jun 13, 2025
	3.6 Last day of payment for tuition fees and fines for late registration (The students will be charged for 2,000 baht.)	Aug 30, 2024 (before 10:00 p.m.)	Jan 31, 2025 (before 10:00 p.m.)	Jun 13, 2025 (before 10:00 p.m.)
	3.7 Course withdrawal (No refund)	Aug 17 - Nov 22, 2024	Jan 18 - Apr 25, 2025	May 31 - Jul 11, 2025
4	Advisor or program director's approval notice toward the registration results	Within 5 days after receiving student registration request		
5	Invoice and course list will be informed via e-mail to each student. The students can download and print out the invoice for payment to be proceeded at bank counters or through electronic channels.			
	5.1 Regular Registration 5.2 Late Registration 5.3 Add/Drop Course Registration	12 days after student registration request		
6	Announcement of student enrollment's list and payment status on https://graduate.mahidol.ac.th (Student Service System)	From Jul 15, 2024	From Dec 16, 2024	From May 12, 2025
7	The Faculty of Graduate Studies submits the list of students who do not register for courses or register without the tuition fee payment for student status suspension.	Sep 30, 2024	Mar 3, 2025	---
8	Course evaluation	Nov 11 - Dec 16, 2024	Apr 14 - May 19, 2025	Jun 30 - Jul 28, 2025
9	Submission of course evaluation summary for the semester to FGS	Within Dec 20, 2024	Within May 23, 2025	Within Jul 25, 2025
10	Grade Report announcement on https://graduate.mahidol.ac.th (Student Service System)	From Dec 21, 2024	From May 24, 2025	From Jul 26, 2025

Appeal Procedure



Complaints and Appeals Process
Research Center for Neuroscience

NS Complaint

The NS Complaint Form can be obtained by scanning the QR code and submit the form in the NS Suggestion Box located on the 3rd floor in front of the MB library.

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Phutthamonthon, Nakhon Pathom 73170
Tel. 02-441-9003-7