Faculty of Science

Master of Science in Nanoscience and Nanotechnology (International Graduate Program)

King Mongkut's University of Technology Thonburi

Program philosophy

Nanoscience and Nanotechnology, International Graduate Program is an integrative program focusing on providing master graduates with operational and analytical research skills. The multidisciplinary program interconnects distinct knowledges of physics, chemistry, biology, and engineering to attain several multifaceted advantages for economy, communities, and sustainable environment domestically and internationally.

Qualification for admission to study

The integrative program is opened for Thai and international students who can speak, listen, write and comprehensive in English. All prospective students must have TOEFL-iBT score not less than 78 or IELTS of not less than 6.00 or TETET of not less than 5 and is a graduate of a bachelor's degree or currently studying in the last semester of a Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.) program or other equivalent field with a cumulative grade point average of not less than 2.75. For those with a cumulative grade point average below 2.75, they have research experience with a publication related to the field of study offered. Somehow this shall be at the discretion of the program committee.

Program structure

Option 1. (thesis 24 credits)

a.	core courses	9	credits
b.	selective courses	3	credits
c.	seminar courses (not counting credit)	2	credits (S/U)
d.	thesis	24	credits

Option 2. (thesis 12 credits)

a.	core courses	9	credits
b.	selective courses	15	credits
c.	seminar courses (not counting credit)	2	credits (S/U)
d.	thesis	12	credits

Date of updating information/data version of TQF 2 approved by the University Council, April 7, 2021.

Future research

- First-principle studies, computational physics and scientific machine learning for perovskite solar cells
- Smart biosensors
- Immunoassays for medical applications
- CRISPR/Cas-based biosensors for point-of-care diagnosis
- Plant-based biosensors for heavy metal contaminants monitoring

Program learning outcomes (PLOs)

PLO1 Able to apply nanoscience and nanotechnology to explain scientific phenomenon at the nanoscale in research that can be conducted academically correct.

PLO2 Able to use scientific equipment for carrying out innovative research in nanoscience and nanotechnology effectively.

PLO3 Able to carry out research in nanoscience and nanotechnology for bringing benefits to the university, communities, or the country with the ethical manner and academical correct way.

PLO4 Able to communicate academically to disseminate knowledge of research in nanoscience and nanotechnology at the international level

Research funding

- Thailand Science Research and Innovation (TSRI)
- Petchra Pra Jom Klao Master's Degree Scholarship (Academic Support)
- Petchra Pra Jom Klao Master's Degree Scholarship (Research Cluster)
- Multi intellectual Scholarship for Master Course Foreign Students from Cambodia, Lao PDR, Myanmar, and Vietnam
- The Greater Mekong Sub region Country Scholarship for Master Course Foreign Students from Cambodia, Lao PDR, Myanmar, Vietnam, and China (specifically Yunnan province)
- KMUTT International Scholarship (for Master Course Foreign Students except Cambodia, Lao PDR, Myanmar, and Vietnam)

Program instructors' expertise

- Perovskite solar cells
- Computational sciences
- Scientific machine learning
- Photoinduced charge separation and transport
- Flexible Perovskite solar cell technology
- Photoluminescence
- Nanobiotechnology
- Plant biotechnology
- Pharmacognosy
- Molecular biology
- Electrochemical sensors
- Biosensors

Research collaboration with other institutions

BIOTEC, NSTDA, Thailand
NANOTEC, NSTDA, Thailand
Department of Physics and Astronomy, College of Natural Science, Michigan State University, USA
Division of Biotechnology, Graduate School of Engineering, Osaka University, Japan
Department of Biotechnology, Universidad Regional Amazónica IKIAM, Ecuador
Institute of Functional Nano Soft Materials, Soochow University, China
National Polymer Science Center of the USA
Etc.

Language used in teaching and learning: English

Contacts

https://www.facebook.com/Nanoscience-and-Nanotechnology-Graduate-Program-at-KMUTT-101606271709716/

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