

# Master & Doctor of Philosophy Programs in Materials Science

Research Fields

## Nanoscience NanoTechnology

NanoTechnology for Medical Applications

Nanosensors for Disgonosis and Screening

NanoTechnology for Environmental Concerns

Nanomaterials for Food Packaging

Nanomaterials for Energy Harvesting and Storage

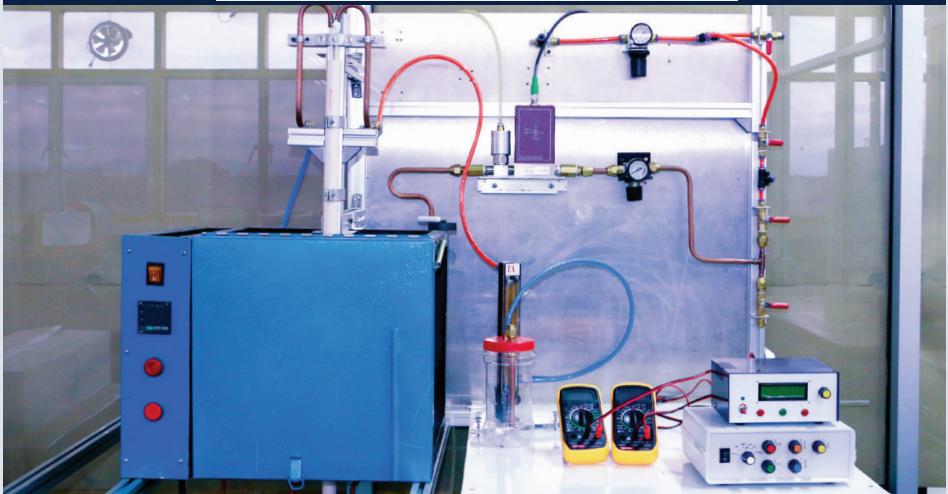
Electronics Materials

Advanced Ceramics

Biodegradable Polymers



For more information,  
please visit the following website.  
[www.physics.science.cmu.ac.th](http://www.physics.science.cmu.ac.th)



## Doctor of Philosophy Program in Materials Science

### Type 1.1 : For Student with Master's Degree

**Degree Requirements** **48 credits**

#### A. Thesis

210898 Doctoral Thesis 48 credits

#### B. Academic activities

1. The whole or a part of the thesis must be published or accepted for publication in international journal. The journals must be have an impact factor, a quality peer review system, be widely accepted in the field and also must not be on a blacklist of low quality journals from and agency. The journal must be indexed by ISI, Scopus, IEEE, PubMed or Web of Science, where the student must be the first author with at least 2 papers. One of the papers must be in a journal with quartile socres of 1–3 in the research filed with the student as the first author.
2. The student must present a conference presentation at least one time by English oral presentation on topics related to the thesis at an international conference. Documentary (or media such as video etc. or reference person to confirm the oral presentation) for the presentation must be shown to the program's committee.
3. The student must attend the academic activities provided by the program's committee such as additional English language training courses etc.
4. The student has to report his/her thesis progress to the Graduate School every semester for approval by the Chairman of the Graduate Study Committee

#### C. Non-credit Courses

1. Graduate School requirement – a foreign language (English language)
2. Program's requirement :
  - those who are deficient in basic background must register courses recommended by his/her thesis advisory committee and the program's committee. The student has to report the result of his/her registration to the curriculum committee of the program.
  - 210891 Ph.D. Seminar in Materials Science 1
  - 210892 Ph.D. Seminar in Materials Science 2
  - 210893 Ph.D. Seminar in Materials Science 3

#### D. Qualifying Examination

1. The student must pass a qualifying examination to evaluate his/her ability before presenting a thesis proposal. The examination has two parts :
  - 1.1 Written examination for determining the basic knowledge in Materials Science
  - 1.2 Oral examination for the thesis section
2. An unsuccessful examinee may retake examinations not more than one time within the following regular semester.

#### E. Comprehensive Examination

Having submitted a request form to the Graduate School, approved by thesis advisor or major thesis advisor , a student must then pass a comprehensive examination.

#### Type 2.2 : For Student with Bachelor's Degree

<b>Degree Requirement</b>	<b>a minimum of</b>	<b>72</b>	<b>credits</b>
<b>A. Coursework</b>	<b>a minimum of</b>	<b>24</b>	<b>credits</b>
1. Graduate courses	a minimum of	24	credits
1.1 Field of Specialization	a minimum of	24	credits
1.1.1 Required courses		19	credits
210702	Characterization of Materials	3	credits
210703	Fabrication Processes of Materials	3	credits
210704	Structures and Properties of Materials	3	credits
210705	Chemistry for Materials Science	3	credits
210707	Group Study in Materials 1	1	credit
210708	Group Study in Materials 2	1	credit
210791	Seminar in Materials Science 1	1	credit
210792	Seminar in Materials Science 2	1	credit
210891	Ph.D.Seminar in Materials science 1	1	credit
210892	Ph.D.Seminar in Materials science 2	1	credit
210893	Ph.D.Seminar in Materials science 3	1	credit
1.1.2 Elective courses	a minimum of	5	credits

A student may select the following courses or other related graduate courses to the field that are available, according to the assignment of his/her dissertation advisors.

210717	High Strength Materials	3	credits
210723	Ferroelectric Materials	3	credits
210731	Electron Microscopy	3	credits
210732	Electron Microscopy Laboratory	1	credit

210733	Mechanical and Durability Properties of Concrete	3	credits
210734	Materials for Energy	3	credits
210741	Physics of Advanced Ceramics	3	credits
210743	Electroceramics	3	credits
210744	Advanced Cement-based Materials	3	credits
210745	Structure and Property Relations in Materials	3	credits
210746	Porous Materials	3	credits
210748	Biomedical Materials	3	credits
210751	Advanced Composite Materials	3	credits
210781	Metallurgical Thermodynamics	3	credits
210782	Diffusion in Solids	3	credits
210784	High Temperature Oxidation of Metals and Alloys	3	credits
210785	Advanced Physical Metallurgy	3	credits
210787	Surface Technology for Wear and Corrosion Resistance	3	credits
210789	Selected Topics in Materials Science	3	credits

1.2 Other courses –None–

2. Advanced Undergraduate Courses –None–

### B. Thesis

210898	Doctoral Thesis	48	credits
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