



**Master of Arts and Master of Science in
Human-Centered Design
International Program
New Curriculum, Year 2004**

**School of Architecture and Design
King Mongkut's University of Technology Thonburi**

Table of Content

	Page
1 Program	3
2 Degree	3
3 Responsible Unit	3
4 Philosophy and Objectives of the Program	3
5 Admission Period	4
6 Qualifications of Applicants	4
7 Admission Procedures	4
8 Credit System	4
9 Program Duration	5
10 Enrollment	5
11 Graduation Requirements	5
13 Number of Students	6
14 Campus and Facilities	6
15 Library/ Resources	6
16 Budget	7
17 Course Description	9
18 Curriculum Quality Assurance	13

**Master of Arts and Master of Science
in Human-Centered Design
(International Programs)
New Curriculum 2004
School of Architecture and Design (SOA&D)
King Mongkut's University of Technology Thonburi**

1. Program

Master of Arts/Science Program in Human-Centered Design

2. Degree

Full-name : Master of Arts in Human-Centered Design (International program)

Abbreviated name : M.A. (Human-Centered Design)

Full-name : Master of Science in Human-Centered Design (International program)

Abbreviated name : M.Sc. (Human-Centered Design)

3. Host

School of Architecture and Design – SOA&D, King Mongkut's University of Technology Thonburi

4. Philosophy, Goals and Objectives of the Program

4.1 Philosophy

The School adopts the Philosophy of 'Human-Centered Design' (HCD). HCD focuses on problem solving and creativity of designing products, information, system, environment, and services. The design should respond to physical, psychological, and social and cultural needs and constraint of human beings. The philosophy focuses on the understanding of users' values and needs as a source of inspiration for design and how to apply knowledge to design. HCD's underlying philosophy, the attempt to improve the qualities of human's life, is in accordance with SOA&D's goal. Graduates will be creative, socially aware and ethically responsible practitioners. They will be prepared to communicate and work internationally.

4.2 Goals and Objectives

Goals: The program of graduate study can lead to a Master of Arts or Master of Science degree. The program is aimed to provide for the acquisition of highly specialized knowledge of human-centered design within one of the program emphasis: physical, cognitive, and social & cultural human factors. Graduates should understand the user research, human factors, design theories, design methodology, and research methods. The integration of knowledge from other fields into design as an interdisciplinary approach will be promoted, to enhance design capacities.

Objectives of Master of Science Program (Design Research):

- To validate the design in the specialized context of human-centered design.
- To reach international research standards whilst ensuring the quality of work.

Objectives of Master of Arts Program (Professional Development):

- To produce graduates who understand method of systematic planning, product planning and communication for industries.
- To develop knowledge and capability for design innovation in specialized context of human-centered design.

5. Admission Period

First and second semester of an academic year

6. Eligibility and Selection

A Bachelor's degree in one of the following areas: Industrial Design, Communication Design, Architecture, Interior Architecture or related fields such as Social Science, Physical Therapy, Sports Science, Psychology, Information Technology, Engineering, and Science.

7. Admission Procedures

Submission of required documents

Applicants are to submit the following documents:

- 7.1) Application forms with photo
- 7.2) Work examples or Portfolio
- 7.3) Statement of Intent
- 7.4) A TOEFL score of 530, IELTS 6.5, computer TOEFL score of 196 or other equivalent examination standard
- 7.5) If applicants do not have the TOEFL score, they can test the placement test at School of Liberal Arts, KMUTT
 - 1) If the applicants receive score more than 75%, they can waive from taking English class
 - 2) If the applicants receive score between 70% to 74%, they need to learn LNG 600.
 - 3) If the applicants receive score less than 70%, they need to learn LNG 550 and LNG 600.
- 7.6) Transcript of undergraduate level
- 7.7) Letters of recommendation (3 letters)
- 7.8) Resume

Interview - Applicants may need to make an appointment for interview by person or phone interview.

8. Credit System

An academic year has two semesters and each semester has fifteen weeks. One hour of lecture per week equals to one credit and two to three hours of practices per week is equal to one credit.

9. Program Duration

- a. One and a half or Two years or one and half years for full-time study and three year for part-time study
- b. Total time for study shall not exceed five years.

10. Enrollment

Follow the regulations of KMUTT

11. Graduation Requirements

Follow the regulations of KMUTT

12. Number of Students Accepted

Students	Number of Students				
	2004	2005	2006	2007	2008
First year	10	20	20	20	20
Second year	-	10	20	20	20
Expected graduates	-	10	20	20	20
Total	10	30	40	40	40

13. Building and Equipment

13.1 Building

Using the eight -story building of SOA&D at the Bangkhuntien campus.

13.2 Equipment

13.2.1 Existing equipment

No.	Descriptions	Quantity
1	Microcontroller	6
2	Electronic kit	6
3	Mold forming vacuum machine	1
4	Wood workshop	1
5	Metal workshop	1
6	VDO recorder	1
7	Software for collecting and analyzing statistical research (SPSS)	1

14.2.2 Future needed equipment

No.	Descriptions	Quantity
1	3D scanner	1
2	Foot pressure scanner	1
3	VRML simulator	1
4	Software for collecting and analyzing user behavior(Nodlus)	1
5	Illumination meter	1
6	Computer for data collection	1
7	Software for analyzing human movement and sensors	1
8	Human-Centered Design Laboratory	1
9	Equipments for Perception Testing	1
10	Equipments for Interface/Interaction Design (Control panel)	1

14. Library and Resources

The school library is located on the second floor of SOA&D building at Bangkhuntien campus. It contains many specialized books and journals. It also has a synchronized search system through the main university's library to assist students in locating information resources. The library has also subscribed to major electronic journals in various fields. Moreover, the book loaning system is established to link with other universities.

15. Curriculum

15.1 Interpretation of codes of majors, subjects and classification of classes

DES stands for design

ID stands for Industrial Design

ARC stands for Architecture

Numbers

The first digit

5 means undergraduate and master level

6-7 means master and doctoral level

The second digit

0-1 means supporting research courses

2 means physical human factor courses

3 means psychological human factor courses

4 means social & cultural human factor courses

5 means design planning courses

6-8 means elective

9 means thesis or project

15.2 Structure of Curriculum

Total credits are 36 with two streams

Total Plan A (Thesis)	36 credits	Total Plan B(Non-thesis)	36 credits
- Core courses	9 credits	- Core courses	9 credits
- Elective courses	15 credits	- Elective courses	21 credits
- Thesis	12-18 credits	- Project	6-9 credits

15.2.1 Core Courses

DES 601	Seminars for Graduate Study	3(2-2-9)
DES 602	Research Methodology	3(3-0-9)
DES 603	Design Theory, Methods and Tools	3(3-0-9)

15.2.2 Elective Courses

15.2.2.1 Physical Human Factors

DES 621	Physiology and Ergonomics	3(3-0-9)
DES 622	Anthropometric Design	3(3-0-9)
DES 623	Biomechanics of Human in Design	3(3-0-9)

15.2.2.2 Cognitive Human Factors

ARC 604	Psychology and Perceptions	3(3-0-9)
DES 631	Usability Testing	3(3-0-9)
DES 632	Cognition and Information Processing	3(3-0-9)
DES 633	Interface and Interaction Design	3(3-0-9)

15.2.2.3 Social & Cultural Human Factors

DES 641	Contextual Design and User Studies	3(3-0-9)
DES 642	Cultural Knowledge	3(3-0-9)
DES 643	Social Interaction Design	3(3-0-9)

15.2.2.4 Design Planning and Management

DES 651	Strategic Design Planning	3(3-0-9)
DES 652	Knowledge Management for Design	3(3-0-9)
DES 653	Design Enterprise Management	3(3-0-9)

15.2.2.5 General Elective Courses

(Selects at least 2 courses for Plan A, Selects at least 5 courses for Plan B)

DES 661	Product Architecture and Mass Customization	3(3-0-9)
DES 662	Systems Thinking	3(3-0-9)
ARC 615	Computer Programming for Design Tools	3(0-6-9)
DES 663	Special Topics in Human-Centered Design I	3(3-0-9)
DES 664	Special Topics in Human-Centered Design II	3(3-0-9)
DES 665	Independent Study I	3(0-6-9)
DES 666	Independent Study II	3(0-6-9)
DES 667	Technical Writing for Thesis and Publication	3(2-2-9)
DES 668	Entertainment Media and Game Design	3(3-0-9)

15.2.2.6 Thesis/Special project (Plan A for thesis and Plan B for special project)

DES 691	Project Studies	6(0-12-24)
DES 692	Thesis	12(0-24-48)

16. Plan of Study

16.1 Graduation Policies

Applicants with bachelor's degrees in design or closely related fields such as Industrial Design, Architecture and Interior Architecture can apply Plan A for thesis (M.Sc.) or Plan B for non-thesis (M.A.).

Applicants with degrees in non-design disciplines such as science, engineering and social science can select only Plan A. Applicants preferring Plan B are required to enroll the foundation classes in the following undergraduate courses - IND211, IND 212, IND 213, IND 221, IND222, IND241, IND242, IND 251 and IND252 - for an academic year.

16.2 Plan A and Plan B

Plan A – Thesis	Credits	Plan B – Non-thesis (Project Study)	Credits
Semester 1/1		Semester 1/1	
DES 602 Research Method	3(2-2-9)	DES 602 Research Method	3(2-2-9)
Elective course 1	3(x-x-x)	Elective course 1	3(x-x-x)
General elective 1	3(x-x-x)	General elective 1	3(x-x-x)
.....
	9 (x-x-x)		9 (x-x-x)
Semester 1/ 2		Semester 1/ 2	
DES 601 Seminar for Grad.	3(2-2-9)	DES 601 Research method	3(2-2-9)
DES 604 Design theory, method & tool	3(3-0-9)	DES 604 Design theory, method & tool	3(3-0-9)
Elective course 2	3(x-x-x)	Elective course 2	3(x-x-x)
Elective course 3	3(x-x-x)	General elective 2	3(x-x-x)
.....
	12(x-x-x)		12(x-x-x)
Semester 2/1		Semester 2/2	
General elective 1	3(x-x-x)	General elective 3	3(x-x-x)
DES 692 Thesis	6(0-12-24)	General elective 4	3(x-x-x)
.....	.....	DES 691 Project Study	3(0-6-12)
	9(x-x-x)	.....	.....
			9(x-x-x)
Semester 2/2		Semester2/2	
DES 692 Thesis	6(0-12-24)	DES 691 Project Study	3(0-6-12)
.....	.....	General elective 5	3(x-x-x)
	6(x-x-x)	.....	.....
			6(x-x-x)
Total credit	36(x-x-x)		36(x-x-x)

Notes: Elective class from other schools must to have permission from advisors.

- DES 642 Cultural Knowledge 3(3-0-9)
- Cultural Knowledge for artifacts comes from the cumulative experiences of using products through problem solving and creativity. This class will focus on the search of knowledge, knowledge use, and case study of both past and present in order to transform knowledge into design innovation. Topics in the class will include various kinds of knowledge such as user knowledge, folk wisdom, and worker knowledge.
- DES 643 Social Interaction Design 3(3-0-9)
- This course was designed for the study of social interaction in the community, social gathering, and teamwork. By analyzing the social structure and diversity of people, students will be able to design product or environment that support a number of activities such as working, studying and playing. The topics include the study of globalization, and social group based on geographical area such as on-line community.
- DES 651 Strategic Design Planning 3(3-0-9)
- This course focuses on learning and understanding of how to use, to plan, to implement and to promote design as a business strategy. The students should be able to understand the key influences on the development of an organizational strategy, analyze those influences, propose appropriate strategic behaviors for an organization and demonstrate an understanding of how strategic change can occur within an organization.
- DES 652 Knowledge Management for Design 3(3-0-9)
- The topic in the class opens up the horizons to show the complex user and social dimensions of generating, transmitting and maintaining useful knowledge in organization. It includes the topics related to epistemological perspective, tacit and coded knowledge. The framework and case studies will demonstrate how to transfer knowledge to an innovative product.
- DES 653 Design Enterprise Management 3(3-0-9)
- This course focuses on learning and understanding of how to organize, manage and set up creative businesses/enterprises related to design. The goals of this class are to understand significant, conceptualize, plan and organize design businesses effectively. The study subjects include general knowledge about business management, such as financial management, law, marketing, information technology management, and human resource management.
- DES 661 Product Architecture and Mass Customization 3(3-0-9)
- Advance manufacturing extends the capability of design for variety according to the variety of users. A concept of modularity generates families and platform. The class will explore the concept of architecture that covers from the physical to intangible product such as information architecture. The study also covers the method of building product architecture and mass customization.

DES 667 Technical Writing for Thesis and Publication

2(2-0-6)

Technical writing is provided for students who select a thesis option or want to publish their works in the form of conference and journal article. The focus of this class is on how to write proposal, abstracts, literature review, writing format and style, citation and annotation.

DES 668 Entertainment Media and Game Design

3(3-0-9)

Entertainment Media balances theory with practice in order to develop the key aspects and skill-sets required in the production of interactive content for the digital Entertainment industries. The study includes 2D and 3D animation, video compositing, interactive programming, and digital audio design.

18. Quality Assurance

18.1 Instruction Management System

Goal	Procedure	Evaluation
Understand the philosophy of the school by emphasizing on human factor and analytic knowledge	<ol style="list-style-type: none">1. Focus on user research, human factor and user testing as a central core of the program2. Provide Human-centered Design Laboratory so students are able to test existing product and analyze behavior of use.3. Teamwork for thinking and exchange experience4. Cooperative learning with other university in other areas such as Sports Science, Psychology and Social Science	<ol style="list-style-type: none">1. Evaluation of learning and teaching on a semester basis.2. Evaluate the whole system and find out an effectiveness of each class.3. Graduate on-time no less than 80 %4. Evaluate from the external committees
Instructors should be able to apply knowledge of teaching to research and develop a system of teaching.	<ol style="list-style-type: none">1. Build a system of collecting data both teaching and learning.2. Find a research funding from industries to support learning activities.	<ol style="list-style-type: none">1. Evaluation of teaching and learning by having a committee who are highly-qualified or research experts both inside and outside university including oversea educators.

18.2 Thesis Procedures and Examination System

Goal	Procedure	Evaluation
Support students to have capability in research and innovation in master level that can be applied to industries or continuing study in Ph.D level.	<ol style="list-style-type: none"> 1. Send the thesis or project topics to the outside committee. 2. Encourage students publication and innovation both international and national level. 	<ol style="list-style-type: none"> 1. Review the progress and skills of problem solving of research at least one time per semester under the committee who passes qualification according to KMUTT 2. Candidate of plan A should present their works to the national or international conference or journals. Candidate of plan B should create an innovation and should registration at least one patent or exhibit their works to the public.

18.3 Curriculum Evaluation and Development System

Goal	Procedure	Evaluation
Develop a curriculum up to date and respond to the demands of R&D and industries	<ol style="list-style-type: none"> 1. Support and collect project, research and knowledge as archive. 2. Intra and inter university research exchange 3. Collect students' feedback after graduation and build the archive to support the research network 	<ol style="list-style-type: none"> 1. Evaluate the satisfaction of graduated students and organization outside 2. Evaluate the effectiveness of research from the research exchange program. 3. Evaluate from satisfaction of students 4. Count the research projects and projects each year.