

MIDI Program - TOTAL 134 CREDITS

DESIGN (15)

- 1) Innovate or Die
- 2) Introduction to Design Thinking
- 3) Visual Communication
- 4) Design for Social and Environmental Impact
- 5) Designing in Context

BUSINESS (15)

- 1) Business Model in New Economies
- 2) Business Management Experience
- 3) Strategic Management of Technology and Innovation
- 4) Quantitative Methods for Decision Making
- 5) Marketing and Branding

TECHNOLOGY (15)

- 1) Introduction to Programming
- 2) Introduction to Embedded System
- 3) Internet of Things
- 4) Prototyping
- 5) Introduction to Data Analytics

GEN ED (31)

- 1) Academic English in International Contexts
- 2) Academic Listening and Speaking in International Contexts
- 3) Academic Reading and Writing for International Students
- 4) Man and Ethics of Living
- 5) Learning and Problem Solving Skills
- 6) Miracle of Thinking
- 7) Beauty of Life
- 8) Modern Management and Leadership
- 9) Physical Education
- 10) Gen Ed Elective 1
- 11) Gen Ed Elective 2

MIDI-ATION (40)

- 1) Expedition to Innovation
- 2) MIDIATION
- 3) MIDIATION
- 4) MIDIATION
- 5) MIDIATION
- 6) MIDIATION
- 7) MIDIATION
- 8) CAPSTONE

FREE ELECTIVE (18)

- 1) Free Elective 1
- 2) Free Elective 2
- 3) Free Elective 3
- 4) Free Elective 4
- 5) Free Elective 5
- 6) Free Elective 6

Innovate or Die

Business Model in New Economies

Intro to Programing

Academic English for International student

Learning and Problem Solving

Expedition to Innovation

9 Credits from Design, or Business or Technology

Design course

Business course

Technology course

LNG course

GEN ED course

MIDI-ATION

9 Credits from Design, or Business or Technology

Design course

Business course

Technology course

GEN ED course

GEN ED course

MIDI-ATION

9 Credits from Design, or Business or Technology

Design course

Business course

Technology course

GEN ED course

Free Elective

MIDI-ATION

9 Credits from Design, or Business or Technology

Design course

Business course

Technology course

GEN ED course

Free Elective

MIDI-ATION

Free Elective

GEN ED course

Free Elective

MIDI-ATION

Free Elective

LNG course

Free Elective

MIDI-ATION

Physical Education

CAPSTONE

Multiple Intelligences for Design Integration Program

4 Years Structure

Multiple Intelligences for Design Integration Program

School of Architecture and Design, KMUTT

Name of Program

Bachelor of Science in Multiple Intelligences for
Design Integration

Degree

Full name: Bachelor of Science (Multiple Intelligence
for Design Integration), International Program

Abbreviate name: B.Sc. (Multiple Intelligence for
Design Integration),
International Program

The Objectives of the Program

This course aims to prepare graduating students for
entry-level work as entrepreneurs. Specifically, the
course aims to

- To produce entrepreneurs who understand the
changes that occur in the country and the world
context. Able to integrate basic design
knowledge, business and technology to
become an innovation-based business with
awareness of social and environmental
responsibility. Able to work under social,
cultural and environmental diversity contexts
and international.
- To produce graduates with self-understanding,
able to set work's goals, know how to plan and
find ways to reach the goals.
- To be part of the mechanism to drive the
transformation of the country's economic
structure to an innovation-driven economy
(IDE).

Program Duration

Completion of required credits for full-time program
are to be made within a period of 8 semesters or 4
academic years, but not to exceed 16 semesters or 8
academic years.

Curriculum

Total Program Credits **134** credits

Curriculum Components

General Education Courses 31 credits

- Health Courses 1 credit
- Integrative Courses 15 credits
- Language Courses 9 credits
- Elective Courses not less than 6 credits

Major Courses 85 Credits

- Basic Design 15 Credits
- Basic Business 15 Credits
- Basic Technology 15 Credits
- Multiple Intelligences for Design Integration 40 Credits

Free Elective Courses not less than 18 Credits

Multiple Intelligences for Design Integration Program

Year 1

First Semester		
Code	Course	Credit*
MID 101	Innovate or Die	3(3-0-6)
MID 201	Expedition to Innovation	4(0-8-8)
GMI 101	Business Model in New Economies	3(3-0-6)
FIB 101	Introduction to Programming	3(2-2-6)
LNG 221	Academic English in International Contexts	3(3-0-6)
GEN 121	Learning and Problem Solving Skills	3(3-0-6)
Total		19(14-10-38)
Second Semester		
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID 202	MIDI-ATION®	4(0-8-8)
GEN 231	Miracle of Thinking	3(3-0-6)
LNG 222	Academic Listening and Speaking in International Contexts	3(3-0-6)
Total		19(x-x-x)

Year 2

First Semester		
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID 202	MIDI-ATION®	4(0-8-8)
GEN 111	Man and Ethics of living	3(3-0-6)
GEN xxx	Elective I	3(x-x-x)
Total		19(x-x-x)
Second Semester		
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID 202	MIDI-ATION®	4(0-8-8)
GEN 241	Beauty of Life	3(3-0-6)
XXX xxx	Free Elective I	3(x-x-x)
Total		19(x-x-x)

Year 3

First Semester		
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID xxx or GMI xxx or FIB xxx		3(x-x-x)
MID 202	MIDI-ATION®	4(0-8-8)
GEN 351	Modern Management and Leadership	3(3-0-6)
XXX xxx	Free Elective II	3(x-x-x)
Total		19(x-x-x)
Second Semester		
MID 202	MIDI-ATION®	4(0-8-8)
GEN xxx	Elective I	3(x-x-x)
XXX xxx	Free Elective III	3(x-x-x)
XXX xxx	Free Elective IV	3(x-x-x)
Total		13(x-x-x)

Year 4

First Semester		
MID 202	MIDI-ATION®	4(0-8-8)
LNG 321	Academic Reading and Writing in International Contexts	3(3-0-6)
XXX xxx	Free Elective V	3(x-x-x)
XXX xxx	Free Elective VI	3(x-x-x)
Total		13(0-47-30)
Second Semester		
MID 203	Capstone	12(0-24-36)
GEN 101	Physical Education	1(0-2-2)
Total		13(0-26-38)

*Credit = Credit Hour (Lecture-Practice-Self Study)

Course Description

General Education Courses 31 Credits

Required Courses 25 Credits

Health Courses 1 Credit

GEN 101 Physical Education 1 (0-2-2)

Prerequisite: none

This course aims to study and practice sports for health, principles of exercise, care and prevention of athletic injuries, and nutrition and sports science, including basic skills in sports with rules and strategy from popular sports. Students can choose one of several sports provided, according to their own interest. This course will create good health, personality and sportsmanship in learners, as well as develop awareness of etiquette of playing, sport rules, fair play and being good spectators.

Integrative Courses 15 Credits

GEN 111 Man and Ethics of Living 3(3-0-6)

Prerequisite: none

This course studies the concept of living and working based on principles of religion, philosophy, and psychology by fostering students' morality and ethics through the use of knowledge and integrative learning approaches. Students will be able to gain desirable characteristics such as faithfulness, social responsibility, respect of others, tolerance, acceptance of differences, self-discipline, respect for democracy, public awareness, and harmonious co-existence.

GEN 121 Learning and Problem Solving Skills 3(3-0-6)

Prerequisite : None

This course aims to equip students with the skills necessary for life-long learning. Students will learn how to generate positive thinking, manage knowledge and be familiar with learning processes through projects based on their interest. These include setting up learning targets; defining the problems; searching for information; distinguishing between data and fact; generating ideas, thinking creatively and laterally; modeling; evaluating; and presenting the project.

GEN 231 Miracle of Thinking 3(3-0-6)

Prerequisite: none

This course aims to define the description, principle, value, concept and nature of thinking to enable developing students to acquire the skills of systematic thinking, systems thinking, critical thinking and analytical thinking. The Six Thinking Hats concept is included. Moreover, idea connection/story line and writing are explored. Examples or case studies are used for problem solving through systematic thinking using the knowledge of science and technology, social science, management, and environment, etc.

GEN 241 Beauty of Life 3(3-0-6)

Prerequisite : None

This course aims to promote the understanding of the relationship between humans and aesthetics amidst the diversity of global culture. It is concerned with the perception, appreciation and expression of humans on aesthetics and value. Students are able to experience learning that stimulates an understanding of the beauty of life, artwork, music and literature, as well as the cultural and natural environments.

GEN 351 Modern Management and Leadership 3(3-0-6)

Prerequisite: none

This course examines the modern management concept including basic functions of management—planning, organizing, controlling, decision-making, communication, motivation, leadership, human resource management, management of information systems, social responsibility—and its application to particular circumstances.

Language Courses 9 Credits

LNG 221 Academic English in International Contexts 3(3-0-6)

Prerequisite: none

The course aims at developing the confidence and academic English skills necessary for learners in an international program .The learning and teaching involves the integration of the four language skills, thinking skills and autonomous learning .In terms of reading, the course focuses on reading for main ideas, summarizing skills, critical reading and interpretation skills through the use of real-world content .In terms of writing, the emphasis is on process writing and academic writing to enable learners to effectively use the information gained from reading to support their statements .In terms of speaking, the focus is on sharing opinion and exchanging information on issues related to the learners' content areas or their field of interest .In terms of listening, the focus is on listening to English talks and taking notes from authentic input.

LNG 222 Academic Listening and Speaking in International Contexts 3(3-0-6)

Prerequisite: none

This course aims at developing confidence and academic listening and speaking skills necessary for learners in an international program .The teaching and learning styles involve an integration of English into learners' content areas to enable them to think critically and communicate effectively .Learners will be able to listen to extended speech and lectures in their fields, share ideas and express opinions, conduct an interview for professional, collect data and present a survey project.

LNG 321 Academic Reading and Writing in International Contexts 3(3-0-6)

Prerequisite : LNG 222

The course aims at developing confidence and academic reading and writing skills necessary for learners in an international program. The teaching and learning styles involve an integration of English into learners' content areas to enable them to read academic articles in their chosen fields. Learners will be able to extract main points from the text, purposefully select required information to support their writing, write different forms of reports in their fields, use information obtained from reading and their own experience in writing an essay, and effectively use references and citations throughout the writing process.

Elective 6 Credits

Select from GEN xxx courses or LNG xxx courses

Major Courses 85 Credits

Basic Design Group 15 Credits

MID 101 Innovate or Die 3 (0-6-6)

Prerequisite: None

This course focuses on why innovation or innovative thinking are behind success stories, why product, service, or brand thrives or fails, how a good product or service requires the alignment of design, business, and technology. Circumstance and context behind remarkable success and failure will be scrutinized, including the socio-cultural and environmental impact of a product or service. Cases are used to provide foundation and serve as cache of ideas for future applications.

MID 102 Introduction to Design Thinking 3(1-4-6)

Prerequisite: MID 101

This course provides basic knowledge and understanding of design thinking such as user research, concept development and testing, product/service/system development, as well as how to create new business models. Student will learn to create innovative solutions and to leapfrog creativity and innovation through an easy-to-use, step-by-step guideline including empathize, define, ideate, prototype and test.

MID 103 Visual Communication 3(2-2-6)

Prerequisite: none

This course introduces the practical relevance of a set of nine design principles including Proportion, Asymmetry, Figure & Ground, Transformation, Chance, Dot/Line/Plane, Module, and Idea/Concept/Reflexivity through structured day-length exercises in combinations of drawing, two-dimensions and three-dimensions. This class emphasizes on skills development, conceptual understanding and good working practice. The assessment is done via brief presentations and teacher advice.

MID 104 Design for Social and Environmental

Impact

3 (2-2-6)

Prerequisite: MID 101

This course is designed to broaden student's perspective on design and exercise empathy to the larger scale of society or environment. Analyzing and weighing pros and cons of important innovations, student will learn about unintended impact of great innovations and how to avoid it. We will cover ranges of issues such as ethical dimension, challenges, obstacles, and ingenious solutions by social entrepreneurs. Local social problems will be used as an exercise.

MID 105 Designing in Context 2 (2-2-6)

Prerequisite: MID 101

This course highlights the importance of context in design. Context could be a place, a non-place, a virtual space, or a social and cultural setting. Definition and scope of context is covered including different tools that can be used to make context evident and to inform design, such as geographical map, cognitive map, and diagram. Case method is used to demonstrate how the specificity of context can lead to a good design. Case method is used to demonstrate designs that either adhere or ignore the context and consequences that follow.

Basic Business Group 15 Credits

GMI 101 Business Model in New Economies

3 (3-0-6)

Prerequisite: none

This course introduces students to new business practices in global and regional environments. The knowledge gained from this class consists of new business model, new trend of doing business, new culture, unique challenge in international market, analysis of emerging trends by applying various techniques such as forecasting, and assessment to generate an informed future direction for economy and society.

GMI 102 Business Management Experience

3 (3-0-6)

Prerequisite: GMI 101

Introduction to common aims and characteristics of business and what makes them different. Business structures, cultures, and functions. An introduction to human resource management in business, An introduction to accounting and finance in business, An introduction to marketing in business, Business and social responsibility, business plan development.

GMI 103 Strategic Management for Technology and Innovation 3 (3-0-6)

Prerequisite: GMI 101

This course covers fundamental knowledge in appraising and managing technological innovation in an organization. Topics include an overview of important definition relevant to technology and innovation management, characterization, and role of technological innovation; managing knowledge creation in an organization; managing core competencies and technology-based skills; and intellectual property issues as well as managing

technology as a strategic resource of an organization; formulation of strategic plan, which includes vision, mission, competitive analysis, internal analysis, and external analysis. Business strategies, cultures and functions are identified as internal and external environment considerations affecting businesses.

GMI 104 Quantitative Methods for Decision Making 3 (3-0-6)

Prerequisite: GMI 101

This course covers principle of mathematical modelling, decision-making tools for problems in business and industrial operations, an introductory to probability, decision analysis, basic statistics, regression, simulation, and optimization. These techniques are also explored through computer applications, cases, and examples drawn from marketing, finance, operations management, and other management functions.

GMI 105 Marketing and Branding 3 (3-0-6)

Prerequisite: GMI 101

This course introduces students to the concepts and theories underlying marketing decision making with an emphasis on the strategic considerations that drive and integrate the decisions made for each element of the marketing mix; the need for a brand-building strategy to ensure extendible, relevant, and robust brands; understanding brand values; brands in Business-to-Business marketing; brands in service industries; and branding challenges for high-technology products and services.

Basic Technology Group 15 Credits

FIB 101 Introduction to Programming 3 (2-2-6)

Prerequisite: none

Coding is an essential skill for all learners. The students will develop the systematic thinking skills to solve the problems with computer. An introduction of coding will teach the programming techniques through activities. The students will learn how to use the microcontroller to receive the data from various types of sensors and send the processed data to various types of actuators, including Augmented Reality (AR).

FIB 102 Introduction to Embedded System 3 (1-4-6)

Prerequisite: FIB 101

Embedded systems integrate microcontroller applications with the application of electronic circuits for signal monitoring and processing such as sensors, encoders, velocity and acceleration sensors including inertial measurement units. The system can also be self-driven such as motors, lamps or sounds via digital and analog signal connection. Various basic information transmission methods of embedded systems include I2C and SPI data transmission. Module selection will be varied accordingly to the purpose of embedded systems.

FIB 103 Internet of Things 3 (1-4-6)

Prerequisite: FIB 101

Internet of Things is changing the world. IoT, in fact, allows people to innovate new designs and modern living products. In this class, students shall learn the importance of IoT in society, the current features and

components of typical IoT devices and trends for the future. IoT design considerations, constraints and interfacing between the physical world and students' designs and devices will be covered. Students shall also learn how to make IoT trade-offs between technology, design and business. Class materials cover key components of networking to ensure that students understand how to connect their device to the Internet.

FIB 104 Product Prototyping 3 (1-4-6)

Prerequisite: FIB 101

Product Prototyping is a process that transforms an idea to an actual product. The students will learn the principles of product prototyping including three modules: (1) design thinking and product planning (2) from concept to manufacturing and (3) Intellectual Property. The students will investigate and develop a product prototype theoretically and practically together with specialists in order to deliver the product prototype at the end of the course.

FIB 105 Introduction to Data Analytics 3 (2-2-6)

Prerequisite: none

In this course, attention will be given to aspects of basic data analytics and basic artificial intelligence (AI); how data analytics apply to data in various fields and how can AI be used to analyze and predict data. Moreover, the course will provide raw data examples to practice students in preparing data and analyzing data. Finally, the course assignments are designed to support understanding of problems of raw data and the difficulty of processing raw data before building the machine learning.

Multiple Intelligences for Design Integration 40 Credits

MID 201 Expedition to Innovation 4 (0-8-8)

Prerequisite: none

This course is an introduction as well as a comprehensive summary to the world of innovation and entrepreneurship. Students will have a glimpse into possibilities and variations of proposal. As a team, students will select an issue, or a problem and tackle it systematically. At the end of the course, students will propose a proposal that will be developed into a business during the program of study. The content of business proposal should cover WHY, WHAT, WHO and HOW as well as responding to the framework of innovation, Desirability, Viability and Feasibility.

MID 202 MIDI-ATION® 24 (0-48-48) (S/U)

Prerequisite: MID 201

Students learn how to develop a product, or a service, based on innovation by pursuing their own proposal and business plan under the coaching of the project committee. Scope of work, in this course, depends on the nature of individual's business which could be different according to the action plan proposed. Scope of work in this course covers market research, user research, literature review, ideation, prototyping, testing, product development and finalization, as well as planning in different aspects, including investment, manufacturing, human resource, communication and public relation, fund raising and business launch.

MID 203 Capstone **12 (0-24-36)**

Prerequisite: MID 202

This course is the last step before launching business. Students learn how to test the prototype, design development, market survey for feedback pricing strategy as well as fund raising processes as well as legal process in business, for example, business registration, application for patent.

Free Elective Courses not less than 18 Credits

MID 301 Special Topic Study I **3 (1-4-6)**

Prerequisite: None

Special study that is adjusted to current needs.

MID 302 Special Topic Study II **3 (1-4-6)**

Prerequisite: None

Special study that is adjusted to current needs.

MID 303 Special Topic Study III **3 (1-4-6)**

Prerequisite: None

Special study that is adjusted to current needs.