

DESIGN AND PLANNING PROGRAM

1.5 – 2 Years Structure

Design and Planning Program

School of Architecture and Design, KMUTT

Name of Program

Master of Architecture Program in Design and Planning (International Program)

Master of Science Program in Design and Planning (International Program)

Master of Fine Arts Program in Design and Planning (International Program)

Full name:

Master of Architecture Program in Design and Planning (International Program)

Master of Science Program in Design and Planning (International Program)

Master of Fine Arts Program in Design and Planning (International Program)

Abbreviated name:

M.Arch. (Design and Planning) (International Program)

M.Sc. (Design and Planning) (International Program)

M.F.A. (Design and Planning) (International Program)

The Graduate Program of Design and Planning (International Program) is being developed by a multidisciplinary team of young academics in conjunction with foreign experts and accomplished external advisors. The program is designed to meet prospective demands on professionals who are well versed in innovative research and design, and pioneering planning techniques and methodologies. It helps professionals develop these skills through a dynamic and innovative learning environment revolving around human values, knowledge synergy and partnerships. Advanced Knowledge, specialist techniques and recent technologies are provided in eight fields of study:

Major course:

- Architecture
- Design Management
- Interaction Design
- Building Technology and Innovation
- Acoustics
- Lighting Design
- Urban Management
- Visual Communication

Synergy among the separate fields, networking at national, regional and global levels, and the international recruitment of students and faculties from multiple disciplines shall be encouraged so as to consolidate the cutting-edge quality of the program and to help ensure sustainability in local and regional futures.

PHILOSOPHY

The program philosophy is to develop design and planning professionals with the understanding of the concept of knowledge development and innovation by emphasizing on multidisciplinary and self-learning experience.

Program Duration

Completion of required credits for full time program is to be made within a period 3 – 4 semester or 1.5 – 2 academic years, but not exceeding 10 semesters or 5 academic years.

Curriculum Components

Total Program Credits 36 credits

Course Structure

Coursework and Research	36	credits
Plan A(1) (Thesis 36 credits)	36	credits
Plan A(2) (Thesis 12 credits)		
ñ. Compulsory Core courses	6	credits
ŧ. Major courses	9	credits
ñ. Elective courses	9	credits
¼. Thesis/Research	12	credits
Plan B (Project 6 credits)		
ñ. Compulsory Core courses	6	credits
ŧ. Major courses	9	credits
ñ. Elective courses	15	credits
¼. Project	6	credits
ñ. Compulsory Core courses	6	credits
Plan A(2) (Thesis 12 credits)		
DPL 601 Research Methodology	3	(3-0-9)
DPL 602 Open Studio	3	(2-2-9)
Plan B (Project 6 credits)		
DPL 601 Research Methodology	3	(3-0-9)
DPL 602 Open Studio	3	(2-2-9)
ŧ. Major course	9	credits

Choose in at least 9 credits from Major courses..

(1) Architecture

DPL 611 Integrated Practice in Architecture Design	3	(0-6-9)
DPL 612 Architectural Project Management	3	(3-0-9)
DPL 613 Architectural Design for Development Studio I	4	(0-8-12)

DPL 614 Architectural Design for Development

Studio II	4	(0-8-12)
DPL 615 Glocal Design	3	(1-4-9)
DPL 616 Design Research Studio I	4	(0-8-12)
DPL 617 Design Research Studio II	4	(0-8-12)

(2) Design Management

DPL 621 Strategic Design Planning	3	(3-0-9)
DPL 622 Design Entrepreneurship	3	(3-0-9)
DPL 623 Visionary Design	3	(2-2-9)
DPL 624 Eco-Product Innovation	3	(3-0-9)
DPL 625 Design Audit	3	(0-6-9)
DPL 626 Design Consulting	3	(0-6-9)

(3) Interaction Design

DPL 627 Usability Testing	3	(3-0-9)
DPL 628 Interface and Interaction Design	3	(3-0-9)
DPL 629 Cognition and Information Processing	3	(3-0-9)

(4) Building Technology and Innovation

DPL 631 Architectural Acoustics	3	(3-0-9)
DPL 632 Thermal Comforts & Indoor Air Quality	3	(3-0-9)
DPL 633 Sustainable Design Studios	4	(3-2-12)

(5) Acoustics

DPL 631 Architectural Acoustics	3	(3-0-9)
DPL 634 Vibration, Sound Isolation and Mechanical Noise Control	3	(2-2-9)
DPL 635 Advanced Acoustics Laboratory	4	(2-4-12)

(6) Lighting Design

DPL 636 Art and Science of Light	3	(3-0-9)
DPL 637 Daylighting Design and Innovation	4	(3-2-12)
DPL 638 Lighting Design for Interior	4	(3-2-12)
DPL 639 Lighting Design for Exterior	4	(3-2-12)

(7) Urban Management

DPL 641 Management Strategy and Technique	3(3-0-9)
DPL 642 Urban Strategies and Social Planning	3(3-0-9)
DPL 643 Southeast Asia Urbanism	3(3-0-9)
DPL 644 Planning Communication and Analysis	3(3-0-9)

(8) Visual Communication

DPL 651 Research and Practice in Visual Communication	3(2-2-9)
DPL 652 Contextual Studies	3(2-2-9)
DPL 653 Studio I	3(2-2-9)
DPL 654 Studio II	3(2-2-9)
DPL 655 Studio III	3(2-2-9)
DPL 656 Critical Writing in Art, Design and Media	3(2-2-9)

ก. Elective courses 9/15 Credits

Acoustics	
DPL 666 Audio/Visual System Design	3(2-2-9)
DPL 667 Music Literature and Sound Design	3(2-2-9)

Lighting Design

DPL 661 Luminaire Design	3(3-0-9)
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Urban Management

DPL 662 Seminars on Urban Planning and Management	3(2-2-9)
DPL 663 Participatory Tools for Planning	3(3-0-9)
DPL 664 Urban Economics and Urban Management	3(3-0-9)
DPL 665 City Theory	3(3-0-9)

Develop learning skill courses

DPL 671 Practical Foundation of Communication	3(3-0-9)
DPL 672 Practical Fundamental Skills of Academic Writing	3(3-0-9)
DPL 673 Writing up Research I	3(3-0-9)
DPL 674 Writing up Research II	3(3-0-9)
DPL 675 Public Speaking and Presentation	3(3-0-9)

Special Topic courses

DPL 681 Special Topic Study I	3(0-6-9)
DPL 682 Special Topic Study II	3(0-6-9)
DPL 683 Special Topic Study III	3(0-6-9)
DPL 684 Special Topic Study IV	3(0-6-9)
DPL 685 Special Topic Study V	3(0-6-9)

จ. Thesis/Project 6/12/36 Credits

Plan A 1 (Thesis 36 Credits)	
DPL 711 Thesis	36 credits
Plan A 2 (Thesis 12 Credits)	
DPL 710 Thesis	12 credits
Plan B (Project Study 6 Credits)	
DPL 701 Project Study	6 credits

Study Plan

Plan 1.5 year

Plan A 1 (Thesis 36 credits)

Year 1 Semester 1

DPL 711 Thesis 12 (0-24-48)Total 12 (0-24-48)

Hrs/Week = 72

Year 1 Semester 2

DPL 711 Thesis 12 (0-24-48)Total 12 (0-24-48)

Hrs/Week = 72

Special Semester

DPL 711 Thesis 3 (0-6-12)Total 3 (0-6-12)

Hrs/Week = 18

Year 2 Semester 1

DPL 711 Thesis 9 (0-18-36)Total 9 (0-18-36)

Hrs/Week = 54

Plan A 2 (Thesis 12 credits)

Subject Code Name credits

(Lecture-Lab-Own learning)

Year 1 Semester 1

DPL 601 Research Methodology 3 (3-0-9)

DPL xxx Major 1 3 (x-x-x)

DPL xxx Major 2 3 (x-x-x)

DPL xxx Elective 1 3 (x-x-x)Total 12 (3+x-x-9+x)

Hrs/Week = 12+x

Year 1 Semester 2

DPL 602 Open Studio 3 (2-2-9)

DPL xxx Major 3 3 (x-x-x)

DPL xxx Elective 2 3 (x-x-x)

DPL xxx Elective 3 3 (x-x-x)

Total 12 (2+x-2+x-9+x)

Hrs/Week = 13+x

Special Semester

DPL 710 Thesis 3 (0-6-12)Total 3 (0-6-12)

Hrs/Week = 18

Year 2 Semester 1

DPL 710 Thesis 9 (0-18-36)Total 9 (0-18-36)

Hrs/Week = 54

Plan B (Project 6 credits)

Year 1 Semester 1

DPL 601 Research Methodology
3 (3-0-9)

DPL xxx Major 1 3 (x-x-x)

DPL xxx Major 2 3 (x-x-x)

DPL xxx Elective 1 3 (x-x-x)Total 12 (3+x-x-9+x)

Hrs/Week = 12+x

Year 1 Semester 2

DPL 602 Open Studio 3 (2-2-9)

DPL xxx Major 3 3 (x-x-x)

DPL xxx Elective 2 3 (x-x-x)

DPL xxx Elective 3 3 (x-x-x)Total 12 (2+x-2+x-9+x)

Hrs/Week = 13+x

Special Semester

DPL 701 Project 3 (0-6-12)Total 3 (0-6-12)

Hrs/Week = 18

Year 2 Semester 1

DPL xxx Elective 4 3 (x-x-x)

DPL xxx Elective 5 3 (x-x-x)

DPL 701 Project 3 (0-6-12)Total 9 (x-6+x-12+x)

Hrs/Week = 18+x

Plan 2 years

Plan A 1 (Thesis 36 credits)

Year 1 Semester 1

DPL 711 Thesis 9 (0-18-36)

Total 9 (0-18-36)

Hrs/Week = 54

Year 1 Semester 2

DPL 711 Thesis 9 (0-18-36)

Total 9 (0-18-36)

Hrs/Week = 54

Year 2 Semester 1

DPL 711 Thesis 9 (0-18-36)

Total 9 (0-18-36)

Hrs/Week = 54

Year 2 Semester 2

DPL 711 Thesis 9 (0-18-36)

Total 9 (0-18-36)

Hrs/Week = 54

Plan A 2 (Thesis 12 credits)

Year 1 Semester 1

DPL 601 Research Methodology
3 (3-0-9)

DPL xxx Major 1 3 (x-x-x)

DPL xxx Elective 1 3 (x-x-x)

Total 9 (3+x-x-9+x)

Hrs/Week = 12+x

Year 1 Semester 2

DPL 602 Open Studio 3 (2-2-9)

DPL xxx Major 2 3 (x-x-x)

DPL xxx Elective 2 3 (x-x-x)

Total 9 (2+x-2+x-9+x)

Hrs/Week = 13+x

Year 2 Semester 1

DPL xxx Major 3 3 (x-x-x)

DPL xxx Elective 3 3 (x-x-x)

DPL 710 Thesis 3 (0-6-12)

Total 9 (x-6+x-12+x)

Hrs/Week = 18+x

Year 2 Semester 2

DPL 710 Thesis 9 (0-18-36)

Total 9 (0-18-36)

Hrs/Week = 54

Plan B (Project 6 credits)

Year 1 Semester 1

DPL 601 Research Methodology
3 (3-0-9)

DPL xxx Major 1 3 (x-x-x)

DPL xxx Elective 1 3 (x-x-x)

Total 9 (3+x-x-9+x)

Hrs/Week = 12+x

Year 1 Semester 2

DPL 602 Open Studio 3 (2-2-9)

DPL xxx Major 2 3 (x-x-x)

DPL xxx Elective 2 3 (x-x-x)

Total 9 (2+x-2+x-9+x)

Hrs/Week = 13+x

Year 2 Semester 1

DPL xxx Major 3 3 (x-x-x)

DPL xxx Elective 3 3 (x-x-x)

DPL xxx Elective 4 3 (x-x-x)

Total 9 (x-x-x)

Hrs/Week

Year 2 Semester 2

DPL xxx Elective 5 3 (x-x-x)

DPL 701 Project 6 (0-12-24)

Total 9 (x-12+x-24+x)

Hrs/Week = 36+x

Course Description

DPL 601 Research Methodology 3(3-0-9)

This course provides discussion on meanings of research, research methodology and research techniques. It describes the difference between research methodology and technique. Students are able to analyze and criticize any major research methodologies, commonly known in academia. These would be the fundamental knowledge in the thought development and practical applications for the study, including setting-up research proposal, research methodology selection, data interpretation, analysis and discussion, research conclusion, and/or application recommendations.

Class Learning Outcome (CLO)

1. Demonstrate understanding of key methodological issues, concepts and vocabulary relevant to creative inquiry in architecture, design and art.
2. Demonstrate understanding of role and use of the research process in design and planning.
3. Demonstrate ability to conduct research and use methodologies effectively.
4. Define ethical values and principles and explain how they differ from laws, policies, and codes of conduct.

DPL 602 Open Studio 3(2-2-9)

This course provides an opportunity for students in all tracks to work together as a multidisciplinary team. It emphasizes on the studio practice, based on current issues or aspects.

Class Learning Outcome (CLO)

1. Demonstrate ability to work and contribute to design multidisciplinary approach.
2. Explore and access design knowledge in both own and others discipline in the team.
3. Facilitate and collaborate work in the multidiscipline team.
4. Practice the mean and communicate effectively.

DPL 611 Integrated Practice in Architecture Design

3(0-6-9)

The studio is based on an integrative approach for architectural practice. It aims at new innovative design solutions via a multidisciplinary design. This studio offers the students to broaden and strengthen the architectural design skills to merge with other disciplines for new creative solutions.

Class Learning Outcome (CLO)

1. To integrate the issues and factors related to the reality (practically) to propose reasonable and logical design solutions
2. Be able to initiate the ideas and concept of design logically and understandable
3. To expand and gain the ideas which represent in the design solutions.
4. To effectively arrange and organize the design project.

DPL 612 Architectural Project Management 3(3-0-9)

This course concentrates on the study of factors that affect the success of architectural projects by learning from case studies of historical and contemporary architectural projects and discussing with professional architects or stakeholders. The knowledge and conclusion are concluded among the students or between students and professional architects.

Class Learning Outcome (CLO)

1. Explore and investigate the architectural design and process of historical architecture and the arch.design offices.
2. Be able to conclude ideas to adapt and integrate an improved system in arch.design and management in the office

DPL 613 Architecture Design for Development Studio I

4(0-8-12)

The studio offers students an opportunity to explore architectural concepts and theories with professional architects. The studio allows both local and international professional architects in a short and long term to work with students to explore ideas to expand the conceptual and theoretical level to practical level.

Class Learning Outcome (CLO)

1. Explore and understand the current and future issues in order to propose creative design solutions for better living.
2. To understand the relationship with concepts/theories and practical practice in architectural design.
3. Be able to raise their own interested and critically question the built environment.
4. Improve the design skills and technique of presentation with current and advanced media and technologies with local and international architects.

DPL 614 Architecture Design for Development Studio II
4(0-8-12)

The studio is a continuation of the Architectural Design for Development Studio I to enhance the investigation and theory's application into the architectural design process and construction. The studio allows the professional architects and students to deepen the exploration of the theories and ideas to professional practices.

Class Learning Outcome (CLO)

1. Explore and understand the current and future issues in order to propose creative design solutions for better living.
2. To understand the relationship with concepts/theories and practical practice in architectural design.
3. Be able to raise their own interested and critically question the built environment.
4. Improve the design skills and technique of presentation with current and advanced media and technologies with local and international architects.

DPL 615 Glocal Design 3(1-4-9)

This course offers students to investigate and study the impacts of changes of global onto different local contexts that emphasizes on the architectural design. In addition, the course offers an approach to architectural design based on local conditions: social, economic, cultural, and resource conditions, in order to respond to the global change.

Class Learning Outcome (CLO)

1. Investigate the global changes which effect to the local condition
2. To understand the potentials to synchronize the global and local apply/adapt the new global issues (Tech/society/econ/etc.) to local condition or the other way around.
3. Be able to raise their own interested and critically question the built environment.

DPL 616 Design Research Studio I 4(0-8-12)

The studio opens an area for investigating built environment into questions through a research approach. This allows students to question, criticize, and learn to understand the built environment. The students conclude what found in the process and ideas to their future career and practice.

Class Learning Outcome (CLO)

1. To investigate the built environment via research approach.
2. To be able to apply the research results into architectural design solutions.
3. Demonstrate the process of research and explain the application into the architecture design.

DPL 617 Design Research Studio II 4(0-8-12)

The studio is a continuation of the Design Research Studio I which offers the deepen process and expands the duration in investigation and exploration of the question in our built environment in order to give a sharpen understanding and further the questions for new ideas and innovations.

Class Learning Outcome (CLO)

1. To investigate the built environment via research approach.
2. To be able to apply the research results into architectural design solutions.
3. Demonstrate the process of research and explain the application into the architecture design

DPL 621 Strategic Design Planning 3(3-0-9)

The aim of this class is to understand on how to think, create, plan and implement design strategy as part of a main business strategy. Students learn to analyze key issues surrounding the development of strategic design planning, for example corporate environment, objectives, core competencies and capabilities in order to propose strategic design objectives, strategy, planning and implementation.

Class Learning Outcome (CLO)

1. Show how to research key issues on business level.
2. Generate business design planning at business level.
3. Explain strategic design planning methods.

DPL 622 Design Entrepreneurship 3(3-0-9)

The aim of this class is to understand on how to organize, manage and set up creative design business. Students learn to conceptualize, plan and organize business related to their design interest. The class introduces key topics related to design business, including Intellectual Property Rights, Business Planning and Marketing for Design.

Class Learning Outcome (CLO)

1. Explain key elements and practical tools to start up creative/design business.
2. Explain how to establish your creative/design in market effectively.
3. Explain how to run creative/design business.

DPL 623 Visionary Design 3(2-2-9)

The aim of this class is to understand four aspects i.e., business feasibility, user desirability, technology possibility and sustainability. Then these aspects will be integrated to search, conceptualize, visualize and prototype new design vision for our better futures in service and manufacturing industries, public welfare and government sector. At the end of the course, students will generate both visionary design and business model.

Class Learning Outcome (CLO)

1. Explain four key aspects, i.e. business feasibility, user desirability, technology possibility and sustainability.
2. Prepare design thinking process to generate visionary design and business models.

DPL 624 Eco-Product Innovation 3(3-0-9)

The aim of this class is to understand key aspects involving in new and ecological product development, for example new idea generation, emergent issues, innovation diffusion, eco-product innovation management, marketing for innovation and environment and sustainable innovation strategy. The class provides both theoretical background and professional case studies.

Class Learning Outcome (CLO)

1. Explain new product development process, from ideas to commercialization.
2. Explain key activities in each stage of new product development process.
3. Manipulate the team, resource and time in new product development process.
4. Design and plan eco-friendly product innovation process.

DPL 625 Design Audit 3(0-6-9)

The aim of this class is to learn on existing case studies. Community, corporate or industry which aims to increase design capabilities and potentials or use design as strategy in product, service, brand and/or business development will be selected to audit and analyse. Students are required to set up their auditing systems and tools in order to investigate significant issues related to design within their own interest. The key audited issues are, for example design policy, design strategy, design process, design team, design planning & management and design tools.

Class Learning Outcome (CLO)

1. Explain knowledge and insight of Design Audit by self-exploratory approach.
2. Demonstrate on how to set up design audit tool.
3. Explain key issues related to design capability in industry.

DPL 626 Design Consulting 3(0-6-9)

After collecting information related to design management system, process, team, policy and strategy in Design Audit (DPL 625), students are required to solve organization's problems related to design activities and create a design management system. It aims to train consulting skills in order to drive change and design activities within organizations for long-term prospect.

Class Learning Outcome (CLO)

1. Create a supportive tool to develop design management mechanism.
2. Acquire knowledge and insight by self-learning approach.
3. Explain key issues related to design management implementation.

DPL 627 Usability Testing 3(3-0-9)

Usability testing is a method of product evaluation ensuring that the product is easy to use, effective to use, and easy to learn. Many methods and techniques will be used for the study such as cognitive walk through and verbal protocol analysis. The evaluation of interface will resolve the interface problem and improve product functionality. The study includes a number of testing tool such as usability testing lab and software for behavior analysis.

Class Learning Outcome (CLO)

1. Demonstrate at least one usability method for a term project from UT list.
2. Explain the usability related to human subject testing.
3. Demonstrate how to write the usability report with an insight finding. This includes how To capture, analyze and visualize data.

DPL 628 Interface and Interaction Design 3(3-0-9)

Students will explore issues that pertain to interface and interaction design. The interface is used to communicate how products are used and create an experience of the people who will use it. Methodologies for obtaining and interpreting user behavior will be applied to the design of user interface such as task analysis, observation techniques and unobtrusive measures will be applied to specify user interface functionality.

Class Learning Outcome (CLO)

1. Construct the descriptive or prescriptive model that explains the model of interactive product.
2. Build a prototype of interactive product partially function and demonstrate the concept.

DPL 629 Cognition and Information Processing 3(3-0-9)

The class is an exploration of the concepts of mental models of both users and designers. The study includes the concepts of information theories, information processing and, knowledge representation. The process of human judgment is included in the topic of study such as the decision-making techniques, plans, and actions.

Class Learning Outcome (CLO)

1. Assess the design with the principle of human factor.
2. Employ the theory of cognition to design field.
3. Operate a small experiment related to the human factor for a term project.

DPL 631 Architectural Acoustics 3(2-2-9)

This course is an introduction to physics of sound, hearing mechanism, principles of sound generation, propagation and reception, and theories in room acoustics; acoustical design criteria for architectural planning, indoor and outdoor designs, and sound isolation from mechanical systems. This course will provide students hands-on experience when they work on their projects. A field trip or more will be arranged

Class Learning Outcome (CLO)

1. Explain an introduction to physics of sound, hearing mechanism, principles of sound generation, propagation and reception, and theories in room acoustics; acoustical design criteria for architectural planning, indoor and outdoor designs, and sound isolation from mechanical systems.
2. Practice their work through their projects and field trip.

DPL 632 Thermal Comfort & Indoor Air Quality

3(3-0-9)

Two main issues are discussed in this course: 1) the issues on human physiology, thermal comfort, and thermal balance of the body, comfort scales, and their impact on building envelop, openings, architectural design and material selections, an understanding in both the design issues related to thermal comfort conditions and the environmental requirements in building for human occupancy. 2) The issues regarding Indoor Air Quality (IAQ) and its possible health effects, as well as, to present to students with the most current information on the multi-disciplinary science of IAQ. This basically include: Defining IAQ and related commonly used terms; recognizing the key issues of good IAQ, understanding the benefits, consequences and goals of IAQ, and more importantly, practicing implementing strategies for healthier buildings.

Class Learning Outcome (CLO)

1. Explain the concept of human comfort with relationship with design and environment.
2. Integrate creative environment design and analyze its effect on thermal and IAQ.
3. Describe theorise laws on factors affacting IAQ and investigate, identify thermal-IAQ problems in real building by working with people.
4. Develop and manipulate new design means or innovation to improve quality of life and environment.

DPL 633 Sustainable Design Studio 4(3-2-12)

This course is designed to explore new concept and approach of planning and designing built environment that hope to employ natural resources in the most efficient means. Design process and solution take the least alteration to existed ecosystem. The class lectures will incorporate the sensitive natural factors into the various stages of site and building design. This begins from understanding existing natural setting, interpreting cultural factors, analyzing human behaviour to altering urban landscape in a more sustainable way and creating new suitable systems or spaces that consume the least energy. It also explores aspects of building performance, and applies new concepts and methods to energy-

efficient and sustainable building design. Moreover, this class aims to inspire the design of our habitat that disturbs natural environment at the minimal degree and provide enough resource and healthy environment for the next generation.

DPL 634 Vibration, Sound Isolation and Mechanical Noise Control 3(2-2-9)

The subject includes: sound transmission theories (airborne, structure-borne, sound transmission loss, Sound Transmission Class –STC), noise control techniques, and space planning. Introduction to M&E noise control design: air-conditioning systems—cross talk, pump, chiller, generator, exhaust fan and water pipe sound insulation. Basic theories in vibration control will be introduced: Modeling of Mass-Spring-Damper systems with Force Excitation, Force response of Damped and Undamped system, Vibration isolation theories, and Practical aspects of vibration isolation.

Class Learning Outcome (CLO)

1. Investigate the sources of acoustical problems.
2. Analyze and solve the problems through lessons learned in class.
3. Hands-on experiences, practice testing/hearing compare with international standards.

DPL 635 Advanced Acoustics Laboratory 4(2-4-12)

Pre-requisite : DPL 631 หรือ DPL 634, DPL 666, DPL 667

The course is an in-depth study on the students' subject of interest. Products of the course can be advanced sound design (record), test experiments proving some theories, or other design testing.

Class Learning Outcome (CLO)

1. Observe and be able to formulate question of interest in an appropriate context and within accessible facilities.
2. Design and plan on researching, experimenting, and collecting data to answer the question posted.
3. Carry out the work as planned and present the work to the advisors.

DPL 636 Art and Science of Light 3(3-0-9)

This course introduces the effects of light and color in architecture, computer graphics as the primary medium, direct observation, basic mathematical analysis, and other forms of representation. These help students understand the complex and interconnected nature of these phenomena, the distinction between natural and artificial light, the related topic of energy consumption, the color of light, and the role of all of these in the shaping of building, as well as the relevant technical aspects of lighting

Class Learning Outcome (CLO)

1. Understand fundamental theories of light/ visual - perception/ human factors.
2. Increase overview of the impact of lighting technology & research on design.
3. Demonstrate ability to integrate theories and create light art installation.

DPL 637 Daylighting Design and Innovation 4(3-2-12)

The aim of this course is to understand daylight properties, the integration of daylight delivery methods, and electric lighting controls, as well as materials, physical modeling, and computer analysis techniques for architectural day-lighting design. In addition, this course covers the application of building-integrated photovoltaic (PV) which includes the available technical know-how of PV technology and a variety of PV-building integrations, the available solar radiation and its influence on the development, production, and energy generation of a structurally integrated PV system.

Class Learning Outcome (CLO)

1. Explain the daylight properties, the integration of daylight delivery methods, and electric lighting controls, as well as materials, physical modeling, and computer analysis techniques for architectural day-lighting design.
2. Practice an in-depth view of research and technologies that link users to lighting applications and recent research on human factors in lighting.
3. Aware of managerial skills of professional practice. (e.g. project management)

DPL 638 Lighting Design for Interior 4(3-2-12)

This course introduces the principle and role of light in architecture and its applied way in design solutions that address high quality of lighting in architecture spaces; contemporary and broader issues of light and energy; light to create interior space; obtrusive light and night sky pollution; lighting technology and technology forecasting; light sources; reflector technology, contemporary solar collection techniques related to street lighting. Students will have opportunities to work with world-class lighting designers.

Class Learning Outcome (CLO)

1. Explain the principle and role of light in architecture and its applied way in design solutions that address high quality of lighting in architecture spaces.

DPL 639 Lighting Design for Exterior 4(3-2-12)

This course introduces the influence of lighting conditions on people's visual capabilities, perceptions and moods. It also suggests the fundamental structure and operating characteristics of the biological basic of vision. Moreover, it included in-depth view of research and technologies that link users to lighting applications and recent research on human factors in lighting.

Class Learning Outcome (CLO)

1. Explain global trends of technology for lighting tech.
2. Explain the influence of lighting conditions on people's visual capabilities, perceptions and moods. It also suggests the fundamental structure and operating characteristics of the biological basic of vision.
3. Practice in-depth view of research and technologies that link users to lighting applications and recent research on human factors in lighting.

DPL 641 Management Strategy and Technique 3(3-0-9)

This course will be taught jointly with course DPL 621 of the Design Management field of studies. It will provide students with an overview of basic management strategies and techniques and teach them the principles of Project Cycle Management. Students will have opportunity to apply this knowledge during a workshop

in which they will acquire skills of project management and process organization.

Class Learning Outcome (CLO)

1. Explain basic management strategies, techniques and principles of Project Cycle Management.
2. Use knowledge during a workshop in which they will acquire skills of project management and process organization

DPL 642 Urban Strategies and Social Planning

3(3-0-9)

This course overviews urban theory and social conceptualization i.e. collaborative planning, strategic planning, place-making and visioning. It also covers main thoughts and paradigms in community studies, sustainable development and the impact of societal change on community processes. Recent advances in planning, policy-making and public involvement theories as they relate to the efficient use of land and to the complex interrelationships among the major land uses i.e. housing, commercial, transportation, agriculture and public space will also be discussed and worked out. Though the consultation process, and work in the selected study will be able to conclude a strategic plan for the city to create a quality society based on each year interests these specific.

Class Learning Outcome (CLO)

1. Explain the urban theory and strategy planning
2. Discuss the importance of social planning, participation community development and public involvement in planning.
3. Distinguish complex situations and apply urban strategy for social development.

DPL 643 Southeast Asia Urbanism 3(3-0-9)

This course addresses questions about the essence of Southeast Asian Urbanism. What are the unique historical, aesthetic, and sociological characteristics of Thai cities? How do Thai cities compare to other cities in the region of Southeast Asia? What are common characteristics we share with them and what are the physical, cultural and environmental differences? What can we learn from these neighboring cities? By answering these questions, this course aims to establish a foundation of knowledge

about Southeast Asian cities in order to develop a better understanding of our unique “city image” (Lynch 1960) and urban culture. In addition to identify indigenous and pre-colonial characteristics of Southeast Asian cities, the class will also discuss the western colonial policies that have influenced most cities in this region. We will analyze how these western influences have affected urban culture and the physical form of cities in Southeast Asia.

Class Learning Outcome (CLO)

1. Demonstrate ability to pinpoint the special context of Southeast Asia that has been neglected in western influenced planning discipline.
2. Demonstrate ability to distinguish the unique character and development pattern of different cities in SEA.
3. Demonstrate ability to understand the common character and pattern of life among cities in SEA.

DPL 644 Planning Communications and Analysis

3(3-0-9)

This course emphasizes on the importance of data communication that will effect planning analysis as applicable in urban management. Fundamentals of Geographic Information Systems for Planners will be included in the class. Building upon the fundamental concepts, students also learn to use GIS in research requiring management and analysis of geographic data. Working in computer laboratory is required.

Class Learning Outcome (CLO)

1. Demonstrate understanding of planning communication concept.
2. Demonstrate ability to use GIS for planning analysis.
3. Demonstrate ability to combine concept technology and tools available to communicate and analyze work in planning field.

DPL 651 Research and Practice in Visual Communication

3(2-2-9)

This course introduces to the core themes and values of the track, including articulation, contextualization and critique of personal goals and interests; the relative roles of research, theory and

practice in creative production; and principles of practice-based research.

Class Learning Outcome (CLO)

1. Identify and model a small set of meaningful personal, professional and social interests to be explored through creative inquiry.
2. Conceptualize, produce and critique small - scale experimental projects in response to theory introduced in class.
3. Demonstrate the ability to write & design a visual essay based on critical reflection on project work.

DPL 652 Contextual Studies 3(2-2-9)

This course focuses on theoretical and philosophical contexts of art, media, design and culture. It also emphasizes on contemporary debates, critical reading and creative writing. Students need to construct intellectual frameworks for practical activity.

Class Learning Outcome (CLO)

1. Identify, review and map a set of ideas, theories, works, and technologies relevant to their creative.
2. Plan, run and critically evaluate a seminar based upon a theoretical text decided in class.
3. Research, draft and produce an argumentative essay that synthesises the sources identified in the LO 1 and relates these critically to their own creative practice/ project.

DPL 653 Studio I 3(2-2-9)

Creative Product Studio provides the development of thinking and understanding through practice-based and other forms of research. Tutorials, seminars and studio discussion with external experts are provided.

Class Learning Outcome (CLO)

1. Propose, plan and manage the production of a body self-initiated imaginative work in response to clearly defined issues/ interests/ concerns.
2. Maintain an ongoing critical and reflective perspective on their project work through the production of a detailed journal of ideas, problems and processes.
3. Lead discussion of the theoretical ideas introduced in this and other classes to their creative.

4. Conceptualise and deliver an effective and creative visual presentation/exhibition.

DPL 654 Studio II 3(2-2-9)

Creative Product Studio provides the development of thinking and understanding through practice-based and other forms of research. Tutorials, seminars and studio discussion with external experts are provided.

Class Learning Outcome (CLO)

1. Propose, plan and manage the production of a body self-initiated imaginative work in response to clearly defined issues/ interests/ concerns.
2. Maintain an ongoing critical and reflective perspective on their project work through the production of a detailed journal of ideas, problems and processes.
3. Lead discussion of the theoretical ideas introduced in this and other classes to their creative.
4. Conceptualise and deliver an effective and creative visual presentation/exhibition.

DPL 655 Studio III 3(2-2-9)

Creative Product Studio provides the development of thinking and understanding through practice-based and other forms of research. Tutorials, seminars and studio discussion with external experts are provided.

Class Learning Outcome (CLO)

1. Propose, plan and manage the production of a body self-initiated imaginative work in response to clearly defined issues/ interests/ concerns.
2. Maintain an ongoing critical and reflective perspective on their project work through the production of a detailed journal of ideas, problems and processes.
3. Lead discussion of the theoretical ideas introduced in this and other classes to their creative.
4. Conceptualise and deliver an effective and creative visual presentation/exhibition.

DPL 656 Critical Writing in Art, Design and Media

3(2-2-9)

Extended piece of critical and reflective writing. Critical evaluation and contextualization of practice activity. Preparation for formal written component of the project.

Class Learning Outcome (CLO)

1. Identify, deploy and critique writing strategies for a range of purposes and outcomes
2. Apply high-level literary (technical and expressive) and intellectual (reflection, analysis, synthesis, interpretation) skills in the research and production of written texts.
3. Critically discuss writing as a form of inquiry and relate this to their own creative practice.

DPL 661 Luminaire Design

3(3-0-9)

This course introduces students, under the guidance of faculty staff and lighting manufacturers, to in-depth study of existing lighting industry problem from the point of view of researchers and professionals to develop their skills suited to the lighting fixture design industry. This emphasizes on the creative design process boosted by the application of physical laws, and learning to manage projects on schedule, synthesis, analysis, design robustness and manufacturability. Subject relies on active learning through exercises in lecture and laboratory, and a major design-and-build project. Lecture topics include idea generation, cost estimation, concept selection, visual thinking and communication, kinematics of mechanisms, and design for manufacturing.

Class Learning Outcome (CLO)

1. Explain of luminaire design principles and the application of LED lights, which is a unique light source, together with other materials.
2. Explain the design process and eco-product innovation strategies - be able to develop from ideas to working prototypes.
3. Operate the analyzing tool and to improve the design outcomes accordingly.

DPL 662 Seminars on Urban Planning and Management

3(2-2-9)

This seminar is a crucial component of the program. Coursework focuses on specific aspects of planning and management, such as planning legislation and procedures, but also on linkages between conservation, urban regeneration, tourism and sustainable development. Furthermore, the seminar offers an opportunity for students to strengthen the theoretical knowledge acquired in these and other courses through hands-on exercises in studio-work and workshop modules.

Class Learning Outcome (CLO)

1. Explain specific aspects of planning and management, such as planning legislation and procedures.
2. Demonstrate ability to link between conservation, urban regeneration, tourism and sustainable development.
3. Demonstrate strength in theoretical knowledge acquired in these and other courses through hands-on exercises in studio-work and workshop modules.

DPL 663 Participatory Tools for Planning 3(3-0-9)

In line with the mission statement, this course outlines theories and practices of participatory planning in both Western and Southeast Asian contexts. It also provides students with in-depth knowledge of planning principles and techniques, and planning support systems in particular. They also learn to use a practical toolkit for moderation and process management in the field.

Class Learning Outcome (CLO)

1. Explain theories and practices of participatory planning in both Western and Southeast Asian contexts.
2. Discuss in-depth of of planning principles and techniques, and planning support systems in particular.
3. Use a practical toolkit for moderation and process management in the field.

DPL 664 Urban Economics and Urban Management

3(3-0-9)

This elective course offers an insight in the principles of urban economics and strengthens students' ability for budgeting and financial management, as an application of the compulsory course on management strategies and techniques.

Class Learning Outcome (CLO)

1. Explain the principles of urban economics.
2. Operate budgeting and financial management relating to urban development.

DPL 665 City Theory

3(3-0-9)

This course offers a historical review of urbanization patterns all over the world, as well as an overview of the models and theories that have been developed both in Eastern and Western traditions. It situates urban development at any given time in a given place in a wider social, economic and political context and relates this factual information with the dominant perceptions, images and "Imagineering" about the city at the time. As of the twentieth century onwards, the course focuses on mainstream urban theories (starting from the Chicago School of Castell's Information City up to Sassen's World Cities) but also mentions alternative visions developed under communism and/or fascism government rules as well as those developed by utopianist.

Class Learning Outcome (CLO)

1. Explain a historical of urbanization patterns all over the world, as well as an overview of the models and theories that have been developed both in Eastern and Western traditions.
2. Discuss situates urban development at any given time in a given place in a wider social, economic and political context and relates this factual information with the dominant perceptions, images and "Imagineering" about the city at the time.

DPL 666 Audio/Visual System Design

3(2-2-9)

The course emphasizes on understanding theories in sound quality and sound system design, equipment, and installation techniques. Learners should be able to apply knowledge in the field of sound system design into practice in various environments and situations: meeting rooms, conference rooms, auditoriums,

multimedia play-back environments, movie theaters, amphitheatres, and etc.

Class Learning Outcome (CLO)

1. Analyze and solve the problem by choosing right equipment in A/V design.
2. Illustrate effective communication with engineers.
3. Facilitate & collaborate with engineers.

DPL 667 Music Literature and Sound Design

3(2-2-9)

In an environment bombarded with images and sounds, advanced knowledge about the sonic medium is often under-rated. Knowing how to control volumes, frequencies, quality, different moods of music can be a powerful tool when it comes to establish a wanted atmosphere in a particular space or in an audio/ video work.

The aim of this course is to provide a global knowledge about sound, acoustics and brief music history. Students will become familiar with audio equipment, physics of sound (reverberation, acoustics, decibels) digital audio & music software, and effects of sonic environment on the mood.

Class Learning Outcome (CLO)

1. Explain the various aspects of sound and audio within the environment.
2. Practice a multi-disciplinary approach to the sound, how to improve its quality and its impact on architecture.

DPL 671 Practical Foundation of Communication

3 (3-0-9)

The course aims to develop students' ability of using communication skills more effectively as it focuses on the understanding of grammar and structure, together with developing the semantic knowledge for academic purposes in a practical way. Students will be able to show their applied improvement of accuracy, clarity and comprehension, semantically and grammatically.

Class Learning Outcome (CLO)

1. Demonstrate ability of using communication skills more effectively with applied improvement of accuracy, clarity and comprehension, semantically and grammatically.

DPL 672 Practical Fundamental Skills of Academic

Writing 3 (3-0-9)

The course is designed for students who want to improve their fundamental academic writing skills. It will help them understand the basic writing process and make them aware of the elements contributed to the acquisition of good academic writing. They will learn how to organize their writing pieces starting from sentences to paragraphs and eventually to essays, as well as other important writing aspects such as coherence and unity, writing orders and how to paraphrase and summarize, etc.

Class Learning Outcome (CLO)

1. Illustrate the technical writing.

DPL 673 Writing up Research I 3 (3-0-9)

The course is designed for students who want to develop their thesis writing skills by offering a mixture of lectures, advice and practice in thesis and academic writing. It will help them understand the correct advanced writing process as well as provide various elements that promote their qualified thesis writing. The course will include the required processes of organizing dissertation and research papers, sourcing data, paraphrasing and summarizing, acknowledging sources, creating a list of works cited, etc.

Class Learning Outcome (CLO)

1. Develop their thesis writing skills with the correct advanced writing process.

DPL 674 Writing up Research II 3 (3-0-9)

This course is aimed to better students' existing skill of thesis writing by focusing on how to write critically in each part. Students will learn several writing techniques by using helpful guidelines to produce various types of academic writing pieces with more advancement such as proposals, publications, journals, and conference papers.

Class Learning Outcome (CLO)

1. Produce qualified academic papers, academic articles and other related academic writing pieces.

DPL 675 Public Speaking and Presentation

3 (3-0-9)

This course will help students to develop presentation skills that are required in their study. The course takes the students systematically through the important stages of public speaking and presentations from planning to handling questions. Students will also be exposed to appropriate language required for effective public speaking and presentations. Students will practice the skills learnt at the different stages via short presentations in class and assignments as well as discussions.

Class Learning Outcome (CLO)

1. Develop presentation skills that are required in their study.

DPL 681 Special Topic Study I 3(0-6-9)

The primary purpose of a special topic study course is to provide the exceptional student with the opportunity to explore a special study topic that is not available through regular course offerings. The topic is of mutual interest to the faculty and the student

Class Learning Outcome (CLO)

1. Develop practical, technical and conceptual skills through ongoing creative explorations.
2. Identify pertinent ideas and approaches from relevant fields and apply, test and evaluate these in relation to their own practice.

DPL 682 Special Topic Study II 3(0-6-9)

The primary purpose of a special topic study course is to provide the exceptional student with the opportunity to explore a special study topic that is not available through regular course offerings. The topic is of mutual interest to the faculty and the student

Class Learning Outcome (CLO)

1. Develop practical, technical and conceptual skills through ongoing creative explorations.
2. Identify pertinent ideas and approaches from relevant fields and apply, test and evaluate these in relation to their own practice.

DPL 683 Special Topic Study III 3(0-6-9)

The primary purpose of a special topic study course is to provide the exceptional student with the opportunity to explore a special study topic that is not available through regular course offerings.

The topic is of mutual interest to the faculty and the student

Class Learning Outcome (CLO)

1. Develop practical, technical and conceptual skills through ongoing creative explorations.
2. Identify pertinent ideas and approaches from relevant fields and apply, test and evaluate these in relation to their own practice.

DPL 684 Special Topic Study IV 3(0-6-9)

The primary purpose of a special topic study course is to provide the exceptional student with the opportunity to explore a special study topic that is not available through regular course offerings.

The topic is of mutual interest to the faculty and the student

Class Learning Outcome (CLO)

1. Develop practical, technical and conceptual skills through ongoing creative explorations.
2. Identify pertinent ideas and approaches from relevant fields and apply, test and evaluate these in relation to their own practice.

DPL 685 Special Topic Study V 3(0-6-9)

The primary purpose of a special topic study course is to provide the exceptional student with the opportunity to explore a special study topic that is not available through regular course offerings.

The topic is of mutual interest to the faculty and the student

Class Learning Outcome (CLO)

1. Develop practical, technical and conceptual skills through ongoing creative explorations.
2. Identify pertinent ideas and approaches from relevant fields and apply, test and evaluate these in relation to their own practice.

DPL 701 Project Study (Study Plan B) 6(0-12-24)

Students are required to conduct an original design or innovation project study on a topic related to design and/or planning under the supervision and approval of advisory committee.

Class Learning Outcome (CLO)

1. Use design process and knowledge to develop the project within discipline or multidiscipline under supervision of advisors.
2. Demonstrate on the concept of design skill through media creatively.
3. Practice the ethics code of professional.

DPL 710 Thesis (Study Plan A.2) 12(0-24-48)

Students are required to conduct an original research on a topic related to design and/or planning under the supervision and approval of advisory committee.

Class Learning Outcome (CLO)

1. Develop their own thesis, hypothesis, objective and literature review to the research methodology under supervision of advisor.
2. Demonstrate on the technical writing and presentation for academic publication.
3. Operate the research proposal abide by an institutional review board (IRB).

DPL 711 Thesis (Study Plan A.1) 36(0-72-144)

Students are required to conduct an original research on a topic related to design and/or planning under the supervision and approval of advisory committee.

Class Learning Outcome (CLO)

1. Develop their own thesis, hypothesis, objective and literature review to the research methodology under supervision of advisor.
2. Demonstrate on the technical writing and presentation for academic publication.
3. Operate the research proposal abide by an institutional review board (IRB).