

**SYLLABUS FOR THE DEGREE OF  
MASTER OF ARCHITECTURE (DESIGN)  
[MArch (Design)]**

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

*(This syllabus will apply to candidates admitted in the 2019-20 academic year)*

For the purpose of this syllabus, the teaching of each course will be conducted within one semester.

Candidates are required to complete 204 credits, consisting of 18 core courses (150 credits), 9 elective courses (54 credits), with at least 1 elective course under the History and Theory category, and enroll in no more than 2 elective courses in any of the categories; in order to complete the three-year full-time curriculum.

Study Plan	Semester One	Semester Two	Summer Semester
Year One	3 core courses + 1 elective course	3 core courses + 1 elective course under the History and Theory category	N/A
Year Two	2 core courses + 2 elective courses	4 core courses	1 core course + 1 elective course
Year Three	3 core courses + 2 elective course	2 core courses + 2 elective courses	N/A

First Year of Study		
ARCH7079	Design 9	(12 credits)
ARCH7080	Design 10	(12 credits)
ARCH7173	History of Modern Architecture	(6 credits)
ARCH7330	Principles of Building	(6 credits)
ARCH7331	Introduction to Building Structures	(6 credits)
ARCH7465	Digital Media and Methods	(6 credits)
Any one elective course under any category and one elective course under the History and Theory category (6 credits each)		(12 credits)
Total		60 credits
Second Year of Study		
ARCH7081	Design 11	(12 credits)
ARCH7082	Design 12	(12 credits)
ARCH7093	Summer Studio	(6 credits)
ARCH7074	Architecture and Its Discourses	(6 credits)
ARCH7075	Design and Technology of Sustainable Buildings	(6 credits)
ARCH7076	Advanced Structural Systems	(6 credits)

ARCH7077	Design and Construction Communication	(6 credits)
Any three elective courses under any category* (6 credits each)		(18 credits)
Total		72 credits
Third Year of Study		
ARCH7073	Professional Practice I	(6 credits)
ARCH8073	Professional Practice II	(6 credits)
ARCH8074	Pre-Thesis Seminar	(6 credits)
ARCH8083	Design 13	(12 credits)
ARCH8084	Design 14	(18 credits)
Any four elective courses under any category* (6 credits each)		(24 credits)
Total		72 credits

\*Please refer to Elective Courses section.

## FIRST YEAR: CORE COURSES

### ARCH7079 Design 9 (12 credits)

Design 9 forms a comprehensive introduction to the foundation studies of architecture, addressing the core and related issues essential to the training of an architect. The course aims to teach architectural literacy, to develop critical and analytical skills, to enhance visual, spatial and ideological sensibilities with certain emphasis on the presentation of ideas, concepts, and design both in the visual and verbal format. Field trips form an integral part of the course.

Assessment: 100% continuous coursework assessment

### ARCH7080 Design 10 (12 credits)

Design 10 focuses on architecture and its context with an emphasis on program, spatial organization and the use of digital tools to conceptualize and present design ideas. The course aims to develop both an awareness of architecture within an urban context and an ability to develop an architectural language and design process. A study of an existing area will be made paying particular attention to its architectural, social and environmental characteristics. This study, which includes basic site analysis, will form the basis of ensuing design projects, sketch designs and field studies. Field trips form an integral part of the course.

Prerequisite: ARCH7079 Design 9

Assessment: 100% continuous coursework assessment

**ARCH7173 History of Modern Architecture (6 credits)**

This course examines the history of modern architecture, from the late 19th century to the emergence of post-modernism in the late 1960s. Students will explore modern architecture not as a cohesive or isolated product of any formal school of thought but rather as a complex and contradictory history bound by key formal, theoretical, social, cultural, technological, economic, as well as political moments in time. Throughout the course students will touch upon three key influences and confluences in the development of modern architecture: the key material changes brought about by technology and industrialization, received ideas of progress stemming from the utopian legacy of the Enlightenment, as well as the exigencies of colonization and its aftermath. This course raises major disciplinary questions, themes, and issues that will reverberate throughout the subsequent history and theory curriculum. Content will focus on the European avant-garde as well as intersecting architectural developments in North America and Asia.

Assessment: 100% continuous coursework assessment

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**ARCH7330 Principles of Building (6 credits)**

This course addresses the elemental aspects of building and the fundamental principles of structure. It will present building structures in masonry, timber, concrete, steel, glass and composite and examine the constructional possibilities and limitations of these materials. Furthermore, it will seek a broad-based understanding of how material and constructional choices are determined by its physical site, program, culture, era and environment. The course presents the historical culture of building technology and how material, structural, construction and detail decisions influence the overall architectural project. It will be further demonstrated how the importance of well-articulated geometries and proper means of measurements in drawing and modeling are an essential and integral part of construction methods and processes. The course material will be presented through a series of lectures specific to a material and through analyses of relevant case studies.

Assessment: 100% continuous coursework assessment

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**ARCH7331 Introduction to Building Structures (6 credits)**

The course aims provide students with an appreciation and understanding of the behavior of both horizontal spanning as well as vertical structures. The relationships between load carrying mechanisms and various structural and architectural forms will be explored and case studies of significant structures of these types will be discussed and analyzed in relation to architectural planning and design processes. Structural aspects of site investigation, foundations and retaining structures will also discussed within the context of relevant case studies.

Assessment: 100% continuous coursework assessment

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**ARCH7465 Digital Media and Methods (6 credits)**

This course provides a comprehensive introduction for Masters' students to three-dimensional digital media and methods for architects. The focus of the course is on the application of relevant software packages towards design, analysis, fabrication, and documentation, emphasising topics as the controlled modeling of complex form and the rationalization non-planar geometries. The goal of the class is to bring Masters' students with basic skills in the use of software for architects quickly up to speed with essential tools and processes.

Assessment: 100% continuous coursework assessment

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## **SECOND YEAR: CORE COURSES**

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### **ARCH7081 & ARCH7082    Design 11 and Design 12 (12 credits each)**

These courses are conducted as design studios that lead students through the process of problem based learning in architecture. Each studio focuses on important aspects of the architectural and urban design fields synthesizing architectural design, building technology, architectural history and theory, and professional practice through design and research exercises. Course assessment is based on the completeness of the design solutions, the clarity and quality of the visual materials and student presentations, the originality and creativity of the project.

Field trips may be required for the course.

Assessment: 100% continuous assessment

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### **ARCH7074    Architecture and Its Discourses (6 credits)**

This course is a critical mapping of the ideas, practices and polemics that shape architecture and discourse today. Through a series of case-studies, students will be introduced to the larger debates, problematics and themes which are critical to understanding modernism and its relationship to the contemporary. Understanding the cultural, territorial, and technical issues embedded within these projects will help students generate a meaningful framework through which contemporary issues in architecture may be assessed. Emphasis will also be placed on understanding challenges to contemporary architectural practices, theories and their origins vis-à-vis the continuation, diversification, and transformation of the modernist tradition over the course of the 20<sup>th</sup> century. Attention will be paid to the historiographic questions of how architects defined the terms of their “present”, multidisciplinary approaches and alternative modes of practices, shifts in the role of the architect, as well as the perception and reception of the discipline/profession at large.

Assessment: 100% continuous assessment

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### **ARCH7075    Design and Technology of Sustainable Buildings (6 credits)**

Practical and theoretical principles and methods for the design, assessment and certification of environmentally sustainable buildings will be taught and discussed. Students in the course will seek to develop a critical understanding of sustainability in an architectural context through the reading of seminal texts, case study analysis and design exercises. Contemporary certification methods such as the Hong Kong Building Environmental Assessment Methods, the Green Building Design Label of China, and the US Leadership in Energy & Environmental Design (LEED) methods will be presented to better understand regional and global positions on the practice of building sustainability. The course will also introduce advanced computational technology to integrate environmental performance directly into the design process to investigate possibilities for the future of green buildings.

Assessment: 100% continuous assessment

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### **ARCH7076    Advanced Structural Systems (6 credits)**

This core curriculum course is designed to refine and develop basic experience gained in undergraduate level structures courses. The course presents specific issues and topics in advanced structural systems for architecture. The course will present precedent projects, case studies and strategies for integrating structural principles and analysis into the design process. Course topics may include, but are not limited

to the study of established and exploratory structural systems, construction materials, and modes of collaboration between structural engineers and architects.

Assessment: 100% continuous assessment

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### **ARCH7077 Design and Construction Communication (6 credits)**

As the team leader of the multi-disciplinary design team, it is paramount that students are fully aware of the principles of engineering design: Structure, Building services and Sustainability, Technology and Materials, and other fields of building physics and building economics. The course will introduce an integrated approach to the above as practice in the industry and expected from our students. These principles are presented with life examples with emphasis on how to communicate the above through drawings, documentation and verbally.

Assessment: 100% continuous assessment

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### **ARCH7093 Summer Studio (6 credits)**

This course focuses on architecture and its context with an emphasis on site, program and spatial organization, with specific thematic topics relevant to the current state of the practice of architecture. The course aims to develop the awareness of specific locales in order to develop an architectural language and design process as a response. Particular attention would be given to the social, cultural and environmental characteristics of a specific site. This study, which includes basic contextual analysis, will form the basis of ensuing design projects, sketch designs and field studies. Field trips form an integral part of the course.

Assessment: 100% continuous assessment

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## **THIRD YEAR: CORE COURSES**

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### **ARCH7073 Professional Practice I (6 credits)**

The course outlines the Development Process and to elaborate on the HKIA and RIBA Plan of Works. The objectives of each stage and the associated deliverables required are taught. It will cover Statutory Control of Building Works in Hong Kong in particular, including the evolution of Buildings Ordinance and its application, the duties of an Authorised Person and its professional liability, Building Regulations and Codes of Practice, Practice Notes for Authorised Persons (PNAPs) and the Submission Procedure. The course will introduce other related Ordinance and Codes of Practice such as Town Planning Ordinance, Land issues and Lease control such as land exchange, lease modification, land titles and deeds etc., and other related ordinances.

Assessment: 100% continuous assessment

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### **ARCH8073 Professional Practice II (6 credits)**

The course outlines the Principles of Law and Contract applicable in industry. Agreements and Forms of Contract for use in Hong Kong, including those with and without quantities and for sub-contractors etc. will be introduced. Types of contract for alteration or addition works where a lump sum price is not suitable will be covered. Students will acquire a general understanding of the various means of resolution of contractual disputes including arbitration, mediation, litigation etc.

The second part of the course will outline the conditions of engagement of an Architect and Authorised Person in Hong Kong. Codes of Professional Conduct of the HKIA and ARB, and Conduct of Architectural Competitions will be taught. In addition, Types of Practice/Company and Practice Management required to be a sustainable business will be discussed.

Pre-requisite: ARCH7073 Professional Practice I

Assessment: 100% continuous assessment

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### **ARCH8074 Pre-Thesis Seminar (6 credits)**

This course teaches design research methods in architecture with the aim of preparing students to undertake a design thesis. The expected course outcome is the completion of a thesis statement based upon a programmatic and site-based test case for an independent design and research project. The proposal should state a clear position in relation to the discipline of architecture and demonstrate a clear methodological trajectory. Course format includes lectures, discussions, design as well as some individual research and writing.

Pre-requisite: ARCH7081 Design 11 and ARCH7082 Design 12

Assessment: 100% continuous assessment

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### **ARCH8083 & ARCH8084 Design 13 (12 credits) and Design 14 (18 credits) (Capstone Experience)**

ARCH8083 is conducted as a design studio that leads students through the process of problem based learning in architecture. Each studio focuses on important aspects of the architectural and urban design fields synthesizing architectural design, building technology, architectural history and theory, and professional practice through design and research exercises. Course assessment is based on the completeness of the design solutions, the clarity and quality of the visual materials and student presentations, the originality and creativity of the project.

Pre-requisite: ARCH7081 Design 11 and ARCH7082 Design 12

Field trips may be required for the course

Assessment: 100% continuous assessment

ARCH8084 concludes the architectural curriculum by means of a thesis studio design project. Candidates are required to conduct a self-directed design project under the supervision of a faculty member and to use the studio facilities and resources of the Department to their utmost extent. In addition to demonstrating satisfactory ability in the technical aspects of architectural practice, the thesis should produce innovative work to extend and enrich knowledge in the broader discipline of architecture.

Pre-requisite: ARCH8083 Design 13 and ARCH8074 Pre-Thesis Seminar

Field trips may be required for the course

Assessment: 100% continuous assessment

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## **ELECTIVE COURSES**

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There are five categories of elective courses offered by the MArch(Design) as well as other taught

postgraduate curricula in the Faculty of Architecture available for selection by candidates. These courses may be taken in the first, second, third year and summer semesters in the first and the second year:

- I: History and Theory
- II: Urbanisation and Habitation
- III: Technology and Sustainability
- IV: Digital Media and Fabrication
- V: Practice and Management

1. Candidates shall be guided in selecting these courses. It should be noted that not all courses listed in the syllabus would be offered every year and that new course(s) may be introduced.
2. Students shall enroll in no more than two elective courses in any of the categories; with at least one elective course from the category of History and Theory; unless otherwise permitted by the Head of Department.
3. Below is a list of required courses for students who have not previously taken equivalent courses. Students who have completed equivalent courses, and can provide supporting evidence (i.e. transcript and/or portfolio) are eligible to apply for exemption. The final approval for course waiver is subject to the endorsement by the Head of Department and/or the Programme Director.
  - a. ARCH3058 Architectural History and Theory 2 - Global Perspectives I
  - b. ARCH4602 Building Technology 4 - Building Construction and Practice
  - c. ARCH7569 Materials, Services and Structure – A Comprehensive Study
  - d. ARCH7573 Architecture as Construction in Hong Kong
  - e. One of the following courses under the Urbanization and Habitation category: ARCH7260 Housing in Urban Development, ARCH7264 Contemporary Urbanism or ARCH7269 Architecture and the City.
4. The assessment of the course may take the form of a written, practical or oral test, or by continuous assessment or by any combination of these. If a candidate is required to repeat a course because of failure but that particular course is not offered in the following year, his choice of an alternative course must have the approval of the Head of Department and the relevant course teachers.
5. Choice of other courses offered by other taught postgraduate curricula in the Faculty of Architecture, with a maximum limit of 3 courses, is subject to prior approval by the Head of Department in consultation with the respective Programme Directors. Priority will be given to students from the respective curricula. Please check the courses offered by these curricula at the time of enrolment and refer to the respective syllabus for their course descriptions.

## **CATEGORY I: HISTORY AND THEORY**

### **ARCH3058 Architectural History and Theory 2 – Global Perspective I (6 credits)**

The purpose of this course is two-fold: to introduce students to the development of major architectural ideas and a selected group of significant architectural monuments in Europe, from ancient times to the nineteenth century, and the unique aesthetic, cultural, and historical issues that frame them; and to present the main issues in the study of architecture and the various methods used to analyze and interpret buildings in various spatial and temporal contexts. Lectures and course content will emphasize key themes of cultural, economic, and political interconnectivity and their impact upon architectural production, not only within Europe, but around the world.

Assessment: 100% continuous assessment

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**ARCH7118    Buddhism, Architecture and Buddhist Architecture (6 credits)**

This course explores the philosophies of Buddhism as applicable to Architecture and various forms of Buddhist Architecture. Students will learn the overview of Buddhist Architecture including the historical origin, meaning and cultural background of different building typologies of Buddhism in various regions including India, Sri Lanka, Han China, Japan and Tibet etc. This is also an introduction to the understanding of Oriental culture where Buddhism is an important basis. The course will cover the basic forms and symbolic meaning of Buddhist Architecture in the Theravada, Mahayana, Vajrayana and Zen schools of Buddhism with reference to the architectural examples in the appropriate regions. The architecture of Buddhism will cover monasteries, rock-hewn caves, stupas, temples as well as the Asoka pillar. The course will explore some important architectural icons such as the four holiest sites in India, Samye monastery in Tibet, Ryoanji Temple, Horyuji and Kenninji Temples in Japan, Famen Temple in China, Borobudur in Indonesia, Cave temples of Dambulla in Sri Lanka etc. Also, the influence of Buddhist philosophy on Modern Architecture will also be explained.

Assessment: 100% continuous assessment

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**ARCH7160    The Modern Movement and Beyond (6 credits)**

The course is concerned with theoretical aspects of design activities in architecture. It attempts to trace the evolution of spatial concepts significant to the modern movement and beyond. The course consists of two parts: analytical and synthetic. The analytical part is to develop the students' skill for deeper understanding of the complexity of the built form. The synthetic part attempts to follow the vicissitudes of architectural design through the examination of the works of significant architects.

Assessment: 100% continuous assessment

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**ARCH7161    Vernacular Architecture of Asia (6 credits)**

Vernacular built-form is the most obvious and direct means of expression of a people and their culture. Through the examination of different indigenous building types in different parts of Asia, viz. China, Japan, Indonesia, Malaysia and Thailand, students are able to develop a broader sense of understanding of the relationship between architecture, climate and culture.

Assessment: 100% continuous assessment

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**ARCH7162    Architecture and Memory (6 credits)**

This elective course takes a closer look at the art of motion pictures. Through various theoretical lenses, films are used to create new grounds for architectural discussions while enhancing our understanding of existing ones. Therefore, we will explore the productive interplay between cinematic productions and architectural discourses. The aim is to focus attention on works of quality in order to discuss the evolution of motion pictures in the architectural realm.

Driven by a broad range of films, this elective course will focus on particular architectural terms such as mapping, observation, narrative and memory. These terms are known in architectural studies, but rarely discussed through the lenses of various filmmakers, seen not in a static but a procedural mode of engagement. In order to examine these theoretical frames, we will promote the discipline of film making as a potential field of architectural engagement, thus giving students a relevant film repertoire in the course of their architectural studies.

Assessment: 100% continuous assessment

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**ARCH7163 Architectural Histories (6 credits)**

This reading seminar offers an introduction to the historiography of architectural history and its predominant methodologies. Over the course of the semester, and proceeding in a roughly chronological manner, we will examine some of the key texts in architectural history, their authors, and their respective foci upon fundamental questions of structure, style, materials, and the historical origins of architecture itself.

The course's main objective is to teach students how to think critically about how different histories of architecture have been constructed over time in a variety of particular political, social, as well as cultural contexts. Through these texts, students will also learn about the architects, buildings, and ideas that comprise them. More generally, this course provides students with a variety of theoretical and analytical tools necessary to develop a critical and comparative perspective with respect to the reading and writing of architectural history and theory today.

Assessment: 100% continuous assessment

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**ARCH7164 ReBuilding Utopia: Visions of Architecture in the Post-War World (6 credits)**

This course examines the occurrences of the utopian tendency within the production of architecture in the aftermath of World War II – an event of global magnitude that triggered a series of political, social, economic and cultural consequences in its wake. The bipolar struggle that characterized most of the latter half of the 20<sup>th</sup> century implicated architecture in many ways and at many levels. Amidst postwar reconstruction in Europe and Japan, the continuation of war via the Cold War, widespread decolonization and the territorial divisions of the globe into First, Second and Third Worlds, the rise of America as the dominant superpower, and the internationalization of American popular culture, visions of the future were conceived. Within these post-war contexts and post-colonial realities, the promise of utopia was not simply proclaimed by the avant-gardes. Under the rubric of democracy and modernization, the United Nations, governments of nations, non-governmental organizations, academic institutions and multi-disciplinary groups, took on the task of vision building. At the same time, there emerged those who conceived of counter-utopias and dystopias as responses to the experiences of global homogenization and upheavals occurring at local and regional levels. How was architecture instrumental in forwarding the objectives of the visionaries? How did technologies, methodologies and mindsets find their way into architecture and their corresponding discourses? In what ways did the multiple trajectories of utopia and utopian building inform the history of the discipline as it is understood today? Class discussions are based on assigned readings and individual presentations. Readings are primarily architectural texts but also include definitive texts from other disciplines including cultural studies, geography, sociology, and philosophy that are important in framing pertinent issues or events.

Assessment: 100% continuous assessment

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**ARCH7165 Modern Architecture and the Visual Realm (6 credits)**

The objective of this seminar is to investigate the relationship of modern architectural work and the visual realm. The development of architectural theory, publication and/or detailing which simultaneously accept and deny the perception on modern architecture as a retinal art form will be the subject of discussion and investigation. In-depth analysis conducted on selected modern buildings form the basis of argument for students to develop their own critical thinking towards architectural theory and building appreciations.

Assessment: 100% continuous assessment

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**ARCH7166 Research Seminar in Visual Cultures (6 credits)**

This course is a visual research seminar with a serious interest in self-directed investigation into urgent spatial, social, cultural, political and economic issues in the world of visual culture today. The aim of this seminar course is to provide a theoretical knowledge, independent visual research issues of cultural difference, performativity, visual display, aurality, encounters with audiences and the production of subjectivities. The seminar with collaborate art institution develop activism towards issues of visual cultures, emphasis will be put on visual research and its production.

Assessment: 100% continuous assessment

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### **ARCH7167 Topics in Modernism (6 credits)**

This seminar investigates the multitude of theories and practices made manifest in architectural and urban form over the course of the late 19<sup>th</sup> and 20<sup>th</sup> centuries. Building upon the fundamental question of what constitutes modernity, modernization, and modernism, we will situate architecture, urbanism, and the architect within a series of broader epistemologies and theoretical concepts, including the diaspora, cross-cultural interaction, globalization, memory, nationalism, Orientalism, the nature of dissent, regionalism, technology, and the problem of translation. Through intensive reading, in-class discussion, and students' individual research projects, the course will also provide a forum for students to discuss these issues with each other and explore new lines of critical inquiry as they pertain to the nature of design research.

Assessment: 100% continuous assessment

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### **ARCH7175 Architectural Studies Field Workshop (6 credits)**

This course is an intensive workshop involving in depth field research in the topic of architectural studies.

Assessment: 100% continuous assessment

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### **ARCH7177 Critical Readings in Modernism (6 credits)**

The course takes Walter Benjamin's The Arcades Project as a model for reading urban experience. Through an assemblage of fragmentary notes — from philosophy, journalism, publicity and poetry — Benjamin left behind a record of 19<sup>th</sup> century Paris and a template for the material history of cities. Students will look closely at The Arcades Project (including sources such as Baudelaire, Bergson, Proust, Corbusier and Giedion), while at the same time compiling a collective reading of contemporary Hong Kong.

Assessment: 100% continuous assessment

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### **ARCH7179 Architects and Politics: Exhibiting Politics (6 credits)**

This course will examine architectural exhibitions as an important tool for architects practicing politics, where architecture and politics are considered to be two separated worlds. The research seminar will introduce the internationally recognized exhibition platform from Biennales, World Expo, and other large site-specific cultural events enable to produce for those interested in understanding architecture beside building alone.

Assessment: 100 % continuous assessment

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**ARCH7180 Topics in Architectural History and Theory (6 credits)**

This course gives students the opportunity to further explore specific issues and topics in architectural history and theory. Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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**ARCH7183 Topics in Architectural History, Theory and Criticism (6 credits)**

This course gives students the opportunity to further explore specific issues and topics in architectural history and theory. Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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**ARCH7184 Beyond the Border: Early Modernist Chinese Architects in the South (6 credits)**

The contemporary city of Hong Kong has been built over the last century by both Architects and Non-architects. As there are criticism on the architectural scene of Hong Kong as monolithic and repetitive, the saying always goes like "there are fantastic urban scenes but no architecture". However, when we begin to look deeper in the cultural roots of modernist architectural development in cities and regions of Southern China [including Shanghai, Hong Kong, Taiwan], there was an early generation of modernist architects educated abroad exploring an independent architecture that spoke for ourselves in context. These attempts were made in respond to our particular cultural preferences, climatic conditions and local materials. By examining these modernist architects who took different perspectives in their interpretation of modernism [e.g. C.K. Chang, Luke Him Sau, Eric Cumine, Wang Da-hong, etc], we can understand how their architecture converges towards a common vision of 'Chinese Modernism'.

Assessment: 100% continuous assessment

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**ARCH7269 Architecture and the City (6 credits)**

**\*cross-listed under Category II: Urbanisation and Habitation**

This contemporary urbanism seminar will investigate urban spatial production processes through selected case studies of 'culture-led urban developments' in the cities of Hong Kong and Singapore. Weekly sessions will thematically introduce the issues of urbanism, from land ownership, public-private partnerships, governance structures, gentrification, etc. that have direct impact on architecture and the built environment in the city. Guest experts from Hong Kong and the region will also give input lectures on selected themes throughout the semester. Students, working in teams, will analyze the case studies using the tools learned in these sessions. Each team will produce a clearly narrated compendium of analytic drawings and diagrams that assesses each of the case studies, which together highlight the comparative analysis built into the duo-city multiple case study.

Assessment: 100% continuous assessment

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**ARCH7380 Republic of Excess: Korea and Contradiction (6 credits)**

There is an on-going proliferation of diverse architectural works taking place in Korea that is distinct from the rest of Asia in terms of evolutionary logic and physiognomy. However, at large, we lack a system of understanding this process of evolution in Korea. This course will examine the origin of the current cultural production in Korea and its relation to the field of architecture, city and history. The philosophical concept of Simulacra: Copies without originals will be the overarching principle behind our attempt to identify and analyze the significance of new and old architecture in Korea. The findings from the course will be shared to engage in further dialogue with Korean counterparts and beyond.

Assessment: 100% continuous assessment

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**ARCH7401 Real Utopias (6 credits)**

**\*cross-listed under Category II: Urbanisation and Habitation**

In Architecture, urbanism and all disciplines of design, ideas are mainly written, analysed, described and publicised through drawings. Such was the case with the drawings of, Hilberseimer (sectional), as well as Superstudio (3-dimensional speculative collage) and many others... Drawings are processes of understating, informing, speculating and projecting. They are a precise code to what they describe and what they propose. The city has been described through both very speculative (fictional) as well as very definitive (real) drawings throughout centuries. Oswald Matthais Ungers used the capacity of speculative drawings as a unique type of description and projection of the realities of the city and not the city Utopia. This seminar will explore, investigate and cross-examine the modern history of representation of the city and its infrastructures through their projective potentials leading to better realities influencing the social/political, the cultural and the economic structures of our societies.

Assessment: 100% continuous assessment

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**ARCH7404 Japan, Architecture, Myth: Unmasking Its Form and Content (6 credits)**

Architecture is a part of society: no more, no less. This course will examine how architecture functions as a form of cultural production within society using Japan as a case study. In the process, we will uncover how various cultural components such as history, literature, and architecture work closely together to form a self-conscious construct that facilitates and maintains an idealized collective identity.

Assessment: 100% continuous assessment

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**CATEGORY II: URBANISATION AND HABITATION**

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**ARCH7260 Housing in Urban Development (6 credits)**

The course investigates the production of housing within the social, political and spatial conditions in urban development. Topics include social and economic determinants of housing location, standards and quality of design; impact on urban development; analysis of housing production including site and infrastructure, provisions; constraints and innovations in the housing industry; and case studies by field trip.

Assessment: 100% continuous assessment

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**ARCH7264 Contemporary Urbanism (6 credits)**

This course integrates urban analysis research and architectural design methodologies to examine relationships between architecture and urbanism through the development of a working understanding of urban and architectural form in the context of the Contemporary City. The course examines the contemporary urban condition through readings of critical theories, analysis of developmental models, as well as empirical investigation of urban sites. In conjunction with physical, historical, social and economic research, alternative design strategies are explored to challenge existing presumptions and models of the contemporary urbanism.

Assessment: 100% continuous assessment

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**ARCH7265 Inter Cities (6 credits)**

Inter Cities will explore transitional areas that are about to undergo significant urban transformation either in terms of massive growth or shrinkage. Usually occupying peripheral territories on the edge of cities these areas display unique characteristics – they are anomalies, estranged and contradictory to normative planning methods. Their condition is patchy and often incoherent mixing landscapes, industrial wastelands, and pockets of residential enclaves. Their governance and control is often contested involving overlapping political and individual desires. As they are emergent they display conditions of urbanism that are un-tested and somehow prototypical providing clues to how the future of our cities may evolve. To this extent Inter Cities are at the forefront of contemporary urbanism. The course will examine the conflicting forces that shape these unique urban landscapes including economy, politics, globalisation, industry, environmental conditions and shifting cultural values. Classes will discuss theoretical texts, examine case study examples, debate key issues and introduce methodological research tools.

Assessment: 100% continuous assessment

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**ARCH7266 Globalization and Resistance in Architecture (6 credits)**

This course aims to examine how the condition of globalization reveals itself in architecture and the urban environment. With an improved understanding of the various forces at play, students are encouraged to think of ways to support a citizenry participation and critique in the making of our buildings and cities in the era of globalization. Paul Ricoeur described a condition of “universal civilization” that encapsulates a scientific spirit and a consumer culture. Today, we are perhaps operating universally under the effects of globalization, aided in no small part by the advent of the information age as well as a more liberal flow of capital and labor. This course will seek architecture as a barometer that measures these effects – appraising specifically the qualities and identities of buildings and districts built or transformed as a result of globalization. Through ten specific readings and building types, the course will examine the co-operative and resistant practices and forms at play.

Assessment: 100% continuous assessment

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**ARCH7268 Urbanism Field Workshop (6 credits)**

This course is an intensive workshop involving in depth field research in the topic of urbanism.

Assessment: 100% continuous assessment

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**ARCH7269 Architecture and the City (6 credits)**

**\*cross-listed under Category 1: History and Theory**

This contemporary urbanism seminar will investigate urban spatial production processes through selected case studies of ‘culture-led urban developments’ in the cities of Hong Kong and Singapore. Weekly sessions will thematically introduce the issues of urbanism, from land ownership, public-private partnerships, governance structures, gentrification, etc. that have direct impact on architecture and the built environment in the city. Guest experts from Hong Kong and the region will also give input lectures on selected themes throughout the semester. Students, working in teams, will analyze the case studies using the tools learned in these sessions. Each team will produce a clearly narrated compendium of analytic drawings and diagrams that assesses each of the case studies, which together highlight the comparative analysis built into the duo-city multiple case study.

Assessment: 100% continuous assessment

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**ARCH7270 The “Navel” of the Earth (6 credits)**

This course looks at the Ancient Greek sites, their history, their topography and their mythological connections both with the old world and the contemporary one. These sites constitute a cultural infrastructure that has forever marked our public lives, as much as the physical ones have. Like the great railways and the electric networks, which crisscross our countries, these places reveal themselves through our multiple readings, artistic, natural, linguistic, each one to suit our ever more heterogeneous and globalized collective.

Assessment: 100% continuous assessment

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**ARCH7271 Composed Grounds (6 credits)**

The ground is the primary surface of human contact and navigation. Whatever the ground is or does, it affects our ability to divide, connect and interact with each other. When tasked with designing grounds, lines need be drawn, zones identified, routes and destinations established; all inevitably leading to a final composition. If composition is understood as the arrangement of elements according to certain principles, what are these principles? What kind of intelligence is embedded within them? What do they contribute in the context of ground? Composed Grounds will provide, through comparative analysis, an overview of composition-driven outdoor spaces. The objective will be to identify (beyond style) constituent elements as well as prevalent means of organization. We will be looking to reveal each work’s design intent through their layers, zones, routes, patterns, connections and (where applicable) programs. As types, Gardens and Parks will take precedence, but these will be loosely interpreted to allow for the inclusion of outdoor spaces with comparable qualities. Furthermore, subjects of investigation may be integrated with or disassociated from Architecture. All selections, however, will exhibit carefully orchestrated compositions.

Assessment: 100% continuous assessment

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**ARCH7272 Together: Communes, Collectives, and Communities - Studying Socio Political Ecologies (6 credits)**

This course offers insights into concepts within the disciplines of philosophy and social political theory that help in the understanding of living and architecture in relationship to its politics, ecologies and economies. The course proposes a mixed method in teaching, including seminars, tutorials and one lecture. The seminar sessions will be taught in a predominantly flipped classroom-teaching environment, to enhance discussions on, and engagement with, the materials of the course.

Assessment: 100% continuous assessment

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**ARCH7273 Topics in Urban/Rural Studies (6 credits)**

This course gives students the opportunity to further explore specific issues and topics in urban design and planning. Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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**ARCH7274 Topics in Urban Studies (6 credits)**

This course gives students the opportunity to further explore specific issues and topics in urban design and planning. Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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### **ARCH7275 A Visual Diary of Paris: Observe, Read, Collect, Draw, Record (6 credits)**

This course will explore and understand the dense urban fabric of the city of Paris. Through walking, observing, collecting, recording and drawing we shall understand the city's relationship to its geography, landscape and infrastructure and how its architecture and landscape are a "synthesis" and not a "juxtaposition". We will learn how the politics and the governance of the city has ruled the city's development and its environs since the 12th century. Students will be guided through centuries of urban and architectural sedimentation, the landscapes and geographies that are displaced and created will be at the core of our discussions. Each student is required to carefully record every possible observation through photographs, drawings, postcards, objects, or extracts from books, newspapers or writings on the city.

Assessment: 100% continuous assessment

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### **ARCH7276 City Metamorphosis: Urban Residual Space (6 credits)**

As a direct result of massive rural-urban migration, we are faced with distinctive city transformation issues in China. This course will cover urban renewal issues in selected local districts from and around the Yangtze River Delta (YRD) region. Historical, Cultural, Socio-economic issues that led to the formation of urban residual space in the inner cities will be identified. The renewal potentials of these spaces will be critically examined and researched upon on. A new set of design parameters would be generated from the research findings. The parameters act as catalyst for plausible design proposals.

Assessment: 100% continuous assessment

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### **ARCH7277 Refugee Camp Design (6 credits)**

In 1961, in opposition to the "war games" and cold war logic, Buckminster Fuller proposed the "World Peace Game" and instructed players to "Make the world work, for 100% of humanity, in the shortest possible time, through spontaneous cooperation, without ecological offense or the disadvantage of anyone." In 2020, we have "At least 79.5 million people around the world that have been forced to flee their homes. Among them are nearly 26 million refugees, around half of whom are under the age of 18."

Our field of study is the world's largest refugee camp: Cox's Bazar in Bangladesh. About 1 million Rohingya was forced to flee genocide in Myanmar since 2017. In Cox's Bazar, the Rohingya face a complex number of challenges: access to drinking water, food, fragile shelter on land-slide prone terrain, sanitation, hygiene, and essential health and education services.

Based on existing need studies, students will work on: Gardening, Composting, Sustainable Toilets, Aquaponics, Rainwater harvesting (and synergy with land sliding in refugee camps), Cartography.

Working in small groups, students will produce device prototype, instruments, and educational material. It is not about solving refugees' challenges, but bringing a new perspective and proposing ideas, design, and educational materials.

The course is being developed with and for actual refugees and experts - many of which will engage in live dialog with the students. Students will be supported to apply for grants to test the designs in Cox's Bazar during summer 2021 with our partners.

Assessment: 100% continuous assessment

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### **ARCH7401 Real Utopias (6 credits)** **\*cross-listed under Category 1: History and Theory**

In Architecture, urbanism and all disciplines of design, ideas are mainly written, analysed, described and

publicised through drawings. Such was the case with the drawings of, Hilberseimer (sectional), as well as Superstudio (3-dimensional speculative collage) and many others... Drawings are processes of understating, informing, speculating and projecting. They are a precise code to what they describe and what they propose. The city has been described through both very speculative (fictional) as well as very definitive (real) drawings throughout centuries. Oswald Matthais Ungers used the capacity of speculative drawings as a unique type of description and projection of the realities of the city and not the city Utopia. This seminar will explore, investigate and cross-examine the modern history of representation of the city and its infrastructures through their projective potentials leading to better realities influencing the social/political, the cultural and the economic structures of our societies.

Assessment: 100% continuous assessment

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### **ARCH7402     Propositions for Planetary Living-II (6 credits)**

Propositions for Planetary Living is an advanced seminar that aims to develop new approaches for cohabitating Hong Kong, based on the assumption that an affluent society knows how to live with/in its environment, and how to be sustainable both socially and environmentally.

Assessment: 100% continuous assessment

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## **CATEGORY III: TECHNOLOGY AND SUSTAINABILITY**

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### **ARCH4602     Building Technology 4 - Building Construction and Practice (6 credits)**

This course has its focus on the connection of building technology with architectural design and practices. From the perspective of technology, it covers an overview of historical buildings, modern architecture, sustainability and professional practices such as stages of work, design drawings for contract documentation and control of details through building code. Various design principles as reflected in general conceptual design and detailing are explained with various reference to local and international examples.

Assessment: 100% continuous assessment.

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### **ARCH7360     Building Structures and Systems (6 credits)**

The course is designed to close the gap between structural theory and design. The subject is divided into two parts. The first part highlights the more important aspects of the structural planning process from architects' point of view. The second, analytical part, develops candidates' skills through case studies of actual projects leading to a deeper understanding of the complexities of the structural problem. Topics such as building failures, structural alteration and additions, building regulations, geotechnics, foundations on difficult grounds and computer-aided structural design/analysis will be discussed.

The course provides an understanding of the realities of designing and manufacturing components of buildings within aesthetic, economic and time frameworks. Design construction communication is studied through production and technical drawings, manufacturer's shop drawings with special emphasis on the use of materials and manufacturing technology. Direct studies of manufacturing techniques both traditional and new are undertaken by field trips to factories and construction sites. Construction systems including the systems approach, standardized buildings, contractual strategies and their impact on the evolution of building production are investigated.

Field trips to construction sites and design offices form an integral part of the course.

Assessment: 100% continuous assessment

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### **ARCH7361 Sustainable Building Systems (6 credits)**

Advanced studies in innovative technologies are undertaken. Energy efficient and intelligent buildings are analyzed and advances in parallel industries such as aerospace, shipbuilding and the transportation industries are studied for applicability in the building industry. Computer modelling is used extensively in this option. Total energy systems are investigated as are low environmental impact techniques.

Assessment: 100% continuous assessment

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### **ARCH7364 Nonspace: Materials, Processes, and Constructions (6 credits)**

While space is the most distinguished objective of architecture, the boundaries and character of space are defined by elements of non-space: materials, processes, and constructions. This is the paradox of architecture. This course explores a conceptual framework for the environmentally responsive design of building assemblies, based upon a clear understanding of materials and their inherent processes and construction technologies. Building materials will be analyzed and carefully drawn with emphasis on their physical and architectural properties, functions, and behavior in manufactured and installed constructions. The design of building assemblies made from concrete, masonry, timber, steel, and glass will be examined in relation to the forces that shape their composition and performance.

Assessment: 100% continuous assessment

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### **ARCH7365 Design Research on Architecture and the Environment (6 credits)**

This course focuses on case studies and design experiments related to architecture and the environment. It foregrounds an understanding of the effects of architecture on its immediate environment, literally the environments that buildings create. This course will be conducted as a research seminar, the predominant mode of thinking, intellectual development and idea formation for the course is physical modeling and diagramming. Each week students will be required to do a series of readings and will work in teams to analyze two precedents through sectional models, drawings and diagrams. Students will study two precedents over the course of the entire semester devoting approximately a half a semester to each. Students will be asked to cull out specific design ideas from readings and associate them with sectional models and drawings for in class discussions and pin ups. Case studies, model making and prototypical modes of research will be used as a vehicle to discern specific disciplinary design techniques and strategies.

Assessment: 100% continuous assessment

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### **ARCH7375 Design After Nature (6 credits)**

Our spatial and sensorial experiences are formed by design through cycles of environmental, material, cultural, political, and economic ecologies. Our “natural“ environment is continuously being designed and defined by our engagement with Hyperobjects resulting a series of Subnatures and new conditions. This seminar will explore the theoretical propositions between architecture, landscape, art, and contemporary ecological theory. Students in this course will critique a series of texts, research, develop a catalogue of sites, and examine a number of different works by various designers and artists. At the end of the course each student shall be responsible for a graphic essay dedicated to a specific site or theoretical position.

Assessment: 100% continuous assessment

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**ARCH7376 Inhabitable Territories (6 credits)**

Located on the ambiguous limits between the artificial and natural world, ski resorts and beaches inform us about human's contemporary relationships to the environment. With a series of territorial installations, a wide range of specialists has been articulating natural spaces in order to enable sensorial experience for the sake of leisure and fun. They have deeply modified the original settings and produced new forms of geography and landscape. The aim of this course is to reveal the underlying system at work by highlighting experiential, programmatic and infrastructural continuities. From an architectural point of view, we will interrogate the way these spaces are generated and the behavior they produce.

Assessment: 100% continuous assessment

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**ARCH7377 Concrete Approximations (6 credits)**

This course exposes students to the physical act of making in architecture through dynamic structural logics and material testing, at scales of intervention larger than possible in the classroom. The objective is to prototype new types of structures, mostly using concrete as casting material, and engaging more closely with the material's unique properties: fluidity, pressure and weight. Students will be tooled up with a variety of form finding techniques and analogue formwork devices, through trial and error experiments. The initial research findings will be synthesized towards the construction of a full-scale and site-specific project exploring inventive fabrication processes of translating complex geometries to local building techniques.

Assessment: 100% continuous assessment

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**ARCH7378 Topics in Architectural Technologies (6 credits)**

This course gives students the opportunity to further explore specific issues and topics in architectural technologies. Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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**ARCH7379 Performative Envelopes (6 credits)**

This course explores the history of membrane use in forms and architecture with a focus on the most recent developments being explored by architects, manufacturers, and scientists. While building on the canon of work that has been done with membranes in the past, students will explore the membrane as a medium, formwork, and environmental interface. Emphasis will be placed on the performative characteristics of membrane technology and architectural layering of various membrane technologies with respect to structural design methods. Membrane materials, PTFE, ETFE, plastics, foils, meshes, printing, laminating, and vacuum forming technologies will be explored relative to new potentials for spatial, structural, and environmental performance. Each student will design a membrane structure and build a prototype of a detail of their membrane.

Assessment: 100% continuous assessment

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**ARCH7382 Floating Marine Laboratory (6 credits)**

In this course, we will design innovative ocean science and entrepreneurship infrastructures. A floating laboratory for research and development to study the ocean and develop sustainable solutions for Hong Kong waters and the world.

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The ocean is where all life comes from and our future depends on it. The ocean covers more than 70% of our planet's surface and absorbs most of the heat from the sun, therefore controlling earth's climate. But our oceans are mostly unexplored while being overfished, polluted with plastic, industrial and agricultural run-offs and radioactive substances. The ocean is suffering a rapid biodiversity decline without much general public awareness and more so lacking significant action to reverse this deadly trend.

Assessment: 100% continuous assessment

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### **ARCH7383 Deep Drawing: The Narrative of Steel Through the Industrial Act of Making (6 credits)**

How does coal – a key element to the process of steel fabrication – metamorphose: crushed, ground, heated, melted and cooked into coke? What is the difference between the ancient blast furnace technique and its electric arc modern counterpart? What landscapes, geographies and wastes are created during this industrial process in relation to materials source, extraction, transformation, production and distribution?

The aim of this seminar is to document the long causal chain of steel production through drawing. From the iron ore extracted through opencast mines, the smooth edges of the final construction component, to the ordering of an element and its delivery to HKU, we will explore the impact and the complex ramifications of steel manufacturing. We will demystify each step of its processing by unveiling at various scales the narrative of steel through the industrial act of making and the material flows between humankind and the environment.

Survey drawing is our primary tool of investigation and the relationships between representational techniques, technology and the reading of the built environment are at the heart of our discussions. The survey encompasses many forms of drawing, from the technical to the speculative or the imaginary. The survey is not an illustration but a construct. The drawer builds on the knowledge gleaned from the survey to reveal what is hitherto unseen to the curious eye. To survey a condition is to reveal its essence, provoking a transformation that renders the first act of design.

Assessment: 100% continuous assessment

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### **ARCH7384 Deep Drawing (6 credits)**

Based around the ambition of developing new tools to examine and plan the territory, students will engage with the transformative role of drawing as a way to investigate topographical and architectural conditions. The drawing will operate at a variety of scales, from the territorial, involving displaced and constructed geographies, to the intimate, looking at the processes of fabrication and manipulation of raw materials into building components. This methodology of drawing as a form of research puts forward the importance of assessing architecture through multiple scales beyond that of the building and various tangibilities. This approach will develop the student's capacity to be both a maker and a territorial agent, triggering an awareness of the designer's social and environmental responsibilities in relation to resources, past and living histories within the design process.

Survey drawing is our primary tool of investigation and the relationships between representational techniques, technology and the reading of the built environment are at the heart of our discussions. The survey encompasses many forms of drawing, from the technical to the speculative or the imaginary. The survey is not an illustration but a construct. The drawer builds on the knowledge gleaned from the survey to reveal what is hitherto unseen to the curious eye. To survey a condition is to reveal its essence, provoking a transformation that renders the first act of design. Each drawing evolves beyond the mere representation of a condition to become the repository of the drawer's findings. By making a survey the drawer 'draws oneself into place' finding points of departure to act and taking an active part in the future of a city or a territory.

Assessment: 100% continuous assessment

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### **ARCH7403      Material History (6 credits)**

This is a seminar about materials, their properties and embedded structural concepts. The seminar seeks to offer a space to reflect on the physical life of building matter and the invisible forces that govern us.

Looking back at the evolution of material invention in the construction practice, we will see to understand the basic principles that define and characterize the behavior of objects (or systems) subjected to forces and what those forces themselves are.

Through short exercises and the analysis of several case studies, we will dive into the world of material science, exploring materials, not only as constructive matter, but as a generator of precise architectural thought.

Assessment: 100% continuous assessment

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## **CATEGORY IV: DIGITAL MEDIA AND FABRICATION**

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### **ARCH7460      Computer Graphics for Architects (6 credits)**

Through a series of exercises, presentations, and discussions, the course will investigate the evolving relationship between architecture and its means of representation, as well as broader issues of technology, information, and culture. While the course will explore the impact of computing technology on the representation of architecture, it will also provide a firm understanding of some of the software required to do so.

Assessment: 100% continuous assessment

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### **ARCH7462      Computer-Aided Architectural Design Methods (CAAD Methods) (6 credits)**

A study of current computer techniques and technologies which can be used by architects to develop design methods that fully exploit contemporary computers as design aids.

Assessment: 100% continuous assessment

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### **ARCH7466      Parametric Structures (6 credits)**

This research seminar will examine the concept of parametric systems and their applications in and implication on architecture. Through a series of lectures and guided design exercises students will be introduced to the theoretical background and logic of parametric systems and the generation of them in the digital environment. Historical building precedents of specific architectural typologies will be examined to open up a critical dialogue between existing physical constraints and the digital realm. Different design techniques will be studied and deployed in order to generate several parametrically driven prototypes that have the capacity to form innovative architectural structures.

Assessment: 100% continuous assessment

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### **ARCH7467      Making Ways and Ways of Making (6 credits)**

One to one design is not an issue of how large a physical output becomes but rather how the properties of real materials are vigorously experimented with at any particular scale. The seminar will strive to bring forward inventive means of making that engage material behaviours in response to external forces at work while remaining receptive to its investigated scale. Making ways for such prototypes will address the necessity to construct intermediary frameworks which will become an integral part of the making process. This workshop based seminar, supported by a series of lectures, will encourage students to explore procedural logics of making that expand on and revisit initial design premises from a series of physical explorations at incrementing scales. Each scale of investigation will have its own design focus and will inform the overall conception of a collective design-built project realized by the students near the end of the course. The core ideology is to influence the process of architectural design in reverse; that is by synthesizing an architectural proposal from the findings emerging out of a succession of well crafted experiments.

Assessment: 100% continuous assessment

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### **ARCH7469 Explorative Architecture Techniques (6 credits)**

The profound embedding of advanced digital and information-based tools in all aspects of explorative architectural practices has caused a radical revolution in contemporary design techniques. By combining case studies of today's leading architects with tutorials on advanced 3D modeling, parametric and algorithmic design methods (scripting), this course investigates the use of digital design techniques in the translation of geometries into built form. The aim is to gain an understanding of the geometric challenges, material possibilities and limitations faced with when working within this new paradigm.

Assessment: 100% continuous assessment

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### **ARCH7470 Architecture By Nature (6 credits)**

Architecture By Nature evolves autonomously from its users and engages with the dynamic complicity between built projects and processes in nature. It is less concerned with environmental compliance and more with the productive collision between architecture and nature: landward, seaward and skyward. We will study intentions from ideal and elementary architectural precedents throughout history. These case studies are grafted in and wrought by extreme environments and will offer a platform from which students will develop their own project. Time based procedures will be introduced as a mean to register physical transformations in the natural environment. We will seek to create specific architectural prototypes that without dependence on nature would simply become generic; instruments taking on the active and physical role of measuring spatially the changing nature of environmental force, otherwise intangible. The essential question for the seminar is: "How does the architect project adaptively and in complicity with such evolving physical and spatial environments?"

Assessment: 100% continuous assessment

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### **ARCH7471 Material Fabrications (6 credits)**

This course is an intensive workshop involving in depth field research in the topic of fabrication.

Assessment: 100% continuous assessment

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### **ARCH7472 Topics in Advanced Technology (6 credits)**

In Site of Erasure students will create short films in order to specifically persuade an audience of a precise architectural position. Through a series of lectures, discussions, presentations, and filmic

exercises, the course will investigate the relationship between architecture and film, as well as broader issues that arise when information and socio-political concerns intertwine.

Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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### **ARCH7473    Advanced Computational Methods for the Future of Design and Construction (6 credits)**

In this course, we will envision how new technologies will change the future of construction and fabrication and in turn, change design. We will first explore concepts of traditional concrete and steel construction. With that background, we will investigate the key design issues which may be solved/caused as 3D Printing and Robotic construction technologies enter the market and the computational methods required for these types of design situations. Through simple projects and case studies, we will learn to appreciate traditional hierarchies of design information but then, we will change the hierarchy of design to explore non-traditional hierarchies. Using computational techniques from the cutting-edge of the industry, we shall encode these hierarchies to exploit the power computation to rapidly explore the design spaces, using insights from data to drive interesting and futuristic designs.

Assessment: 100% continuous assessment

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### **ARCH7474    Structural Research – Gridshells (6 credits)**

This course specialises in the design and construction of doubly curved grid structures. Through analysis of existing structures and innovative research of independent hypothesis, students will become experts in the field of strained gridshells, discovering new potentials for digital design and fabrication.

The course aims to install a methodology of research-by-design, fostering self-responsible, creative research based on well-founded scientific principles. These principles will be taught through theoretical inputs, hands on workshops, model making and digital modelling of reference structures. The class will acquire the ability to use Rhinoceros, Grasshopper as a digital 3D environment to explore and design complex structures, and Kangaroo and Karamba, to conduct form finding and structural analysis tasks, and digital manufacturing to fabricate and construct meaningful prototypes.

Assessment: 100% continuous assessment

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### **ARCH7475    Visual Practices (6 credits)**

The course will explore the use of drawing and visualization as a critical tool for design. Students will experiment with a range of illustrative media and techniques representative of both traditional and emerging design approaches and expand on their ability to work across digital and analogue media. Tutorials will be given in a range of techniques and applications. In-class lectures and tutorials will be supplemented by discussions inspecting relevant drawings and visualizations, their authors and if applicable, the issues that defined their work. A series of iterative drawing and visualization exercises will structure the course. These will be shared and discussed during class. Students are expected to have basic drawing and visualization skills, be able to undertake visual research and produce visual narratives.

Assessment: 100% continuous assessment

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## **CATEGORY V: PRACTICE AND MANAGEMENT**

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**ARCH7405      Research on Participatory Design in Architecture (6 credits)**

Although “Participatory Design” and “Public Engagement” are terms which appear more and more often in contemporary architectural discourse, little research has been done regarding to this methodology. While related fields like urban planning and social studies have substantial literature and theories on wider social participation. This course is an action-research on the topic of participatory design in architecture. By collaborating with a local NGO, students are invited to design a mobile street kiosk in Kowloon City with the engagement of local communities. The methodology and effectiveness of participatory design will be the main focus and how architects can use different engagement tools to achieve a more comprehensive design outcome will be explored in this course.

Assessment: 100% continuous assessment

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**ARCH7560      Aspects of Contract Management (6 credits)**

Detail analysis and studies of standard contracts and sub-contracts for public and private works in Hong Kong. Practical problems in contract administration and project management, the cooperation and partnering of the architect, project manager and the contractor will be examined. Claims, counter-claims, mediation and arbitration will be considered.

Assessment: 100% continuous assessment

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**ARCH7561      Principles and Practices of Building Codes (6 credits)**

The course covers the area of Building Control in detail. The principles, practices and applications of the Building Codes, including the Buildings Ordinance, Building Regulations, Codes of Practices, and Practice Notes for Authorized Persons, will be extensively discussed and explained. Lectures will be supplemented with case studies involving projects in local architectural practices.

Assessment: 40-60% continuous assessment and 40-60% written examination

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**ARCH7563      Community Building Workshop (6 credits)**

The course intends to investigate issues in design and construction through hand-on experiences and involvements in an actual building process. By participating in the design and construction of various types of community projects including temporary or permanent installations, shelters or buildings, students are to explore the nature of materials and structure, methods in construction, as well as modes of fabrication and design media. The process also provides opportunities for students to interact and exchange knowledge with different stakeholders involving in the building process: users, contractors, managers and sponsors. The focus of task for each year may vary pending on the nature of project and resources available, but a commitment to the community and a team work spirit, as well as the appreciation of the tactile and tectonic quality in design will always be essential part for the course.

Assessment: 100% continuous assessment

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**ARCH7564      Building Information Modeling in Architectural Practice (6 credits)**

BIM technology is more and more often adopted in architectural practices throughout the world as the main tool for design, managing and documenting projects. Successful implementation of BIM for day to day work in an office and taking most advantage of the technology requires proper configurations, methodologies and standards. Without such structured approach and without applying best practices

developed by the industry, BIM may easily become more of a problem than a solution. BIM technology allows integration within one project database of Architecture, Structure, MEP (Mechanical, Electrical, Plumbing) and others to create a complete virtual model of a future building. Such a model is like a living entity, constantly updated throughout the design process and later during the building lifetime. In various stages of this lifetime a BIM model can be used for many purposes from scheduling and calculating areas, curtain wall costing, outputting documentation, performing thermal analysis to managing tenants and security issues in the field of building maintenance. Achieving those goals requires understanding of capabilities and limitations of the technology in very practical aspects, but also orientation in prospects and future opportunities for BIM.

Assessment: 100% continuous assessment

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### **ARCH7565 Introduction to Building Information Modelling and Management (6 credits)**

BIM technology is changing and will continue to change the face of architectural profession. It influences all stages of design and project management and aims to integrate within one database Architecture, Structural Design, MEP (Mechanical, Electrical, Plumbing) and others. This database, which contains a 3D model of a building, formal project documentation and other information is a dynamic object, constantly updated throughout the whole design process and building lifetime. In any stage of the project it may be a source of invaluable, up-to-date information about building parameters and physical performance, which would be difficult or expensive to obtain using traditional methods. Such data can help the architect to make more informed decisions at earlier stages of design, which greatly reduces costly changes and errors. The objective of this course is to familiarize students with basic ideas and applications of BIM technology using the most widely adopted BIM software package, Revit Architecture. Examples used for this purpose during the course will be based on real projects and case studies, which count themselves among the most complex and innovative in terms of design, modeling approach and project management.

Assessment: 100% continuous assessment

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### **ARCH7566 & ARCH7567 Topics in Practice and Management I & II (6 credits each)**

*Architects & Money* takes on an often controversial and frequently shunned topic in the architectural profession – money – and all the messy baggage that accompanies it. Purposefully positioned to bridge the divide between architecture and development, this course will offer practical knowledge on how the world of real estate investment and development really works, and simultaneously question the definition of the value of design. The course will also look deeper into the role of the architect in today's global cities and why understanding the financial risks of development – indeed being able to manipulate and mitigate such risks – positions the architect to play a more determinate role in the game and at long last, *grab a piece of the action*. Sessions are envisioned to alternate between seminar-style presentations and more interactive workshops/case studies. A working knowledge of Excel is a course requirement.

Topics change from year to year based on course contents.

Assessment: 100% continuous assessment

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### **ARCH7568 Design Practice Field Workshop (6 credits)**

This course is an intensive workshop involving in depth field research in the topic of design practice.

Assessment: 100% continuous assessment

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**ARCH7569 Materials, Services and Structure – A Comprehensive Study (6 credits)**

This course concentrates on understanding and applying the principles of building structures, building materials and construction technology, environmental controls and building services, in an advanced level of integrated architectural design, geared to the local context. For building materials and construction technology, the emphasis is on the performance criteria and applications of building materials, components and systems of construction. For building structures, the emphasis is on structural schemes systems relating to local building regulations and codes. For environmental controls and building services, the emphasis is on local regulations and codes, and coordination of services for heating, ventilation, air-conditioning, fire safety, plumbing and drainage, electrical, lift and escalators, etc.

Assessment: 100% continuous assessment

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**ARCH7573 Architecture as Construction in Hong Kong (6 credits)**

Constructions in Hong Kong are at an industrial scale with hundreds and thousands of people on site in any single working day. The complexity of organization, logistics, site safety, quality control and coordination of different trades is beyond textbooks of any kind. Architect need to work closely with contractor to get the building built. Students will be visiting sites in Hong Kong at different stages of construction to understand the workflow and major critical activities.

This elective provides a glimpse into the challenges that the architect and the construction team face together, such as how to build consensus, how to prioritize, how to overcome deadlines and most importantly how to work with each others as a team.

Fieldtrips to fabricators such as curtain wall manufacturer, precast factory may be required.

Assessment: 100% continuous assessment

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(Revised on 26 February 2021)