

# REGULATIONS FOR THE DEGREE OF MASTER OF ARCHITECTURE (MArch)

*These regulations and syllabuses will apply to candidates admitted in the 2014-15 academic year and thereafter.*

*(See also General Regulations.)*

Any publication based on work approved for a higher degree should contain a reference to the effect that the work was submitted to the University of Hong Kong for the award of the degree.

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## Admission requirements

**Ar76** To be eligible for admission to the degree of Master of Architecture, a candidate shall

- (a) comply with the General Regulations; and
  - (b) possess a Bachelor of Arts in Architectural Studies Degree of this University; or possess a degree, diploma or other qualification of equivalent standard and content from another university or comparable institution.
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## Curriculum

**Ar77** The curriculum shall extend over two academic years of full-time study. Candidates shall not be permitted to complete the curriculum in more than four academic years.

**Ar78** To complete the curriculum, a candidate shall

- (a) enroll for courses of a total 96 credits (the normal load per semester being 24 credits);
  - (b) follow instruction in the courses prescribed and complete satisfactorily all coursework set either as assessment tasks or practical work to be undertaken as an integral part of the MArch course;
  - (c) satisfy the examiners in all assessment tasks; and
  - (d) a candidate may, subject to approval by the Head of Department, take other postgraduate course(s) in the Faculty of Architecture to fulfill the elective course requirements.
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## Assessment

**Ar79** Candidates shall be assessed for each of the courses which they have registered for, and assessment may be conducted in any one or any combination of the following manners: written examinations or tests, written assignments or exercises, continuous assessment of performance, laboratory work, field work, research, practical work or project reports, or any other manner as determined by the examiners.

**Ar80**

- (a) A candidate must pass in all core courses;
- (b) a candidate may enroll in no more than two elective courses in each of the categories I – V; and a maximum of one course in the category VI Independent Studies unless prior approval is granted by the Head of Department:

Category I:	History and Theory
Category II:	Urbanism and Habitation
Category III:	Technology and Sustainability
Category IV:	Digital Media and Design Computation
Category V:	Practice and Management
Category VI:	Independent Studies

**Ar81** The following clauses apply to candidates of all years:

- a) Candidates who have received a passing grade in a core design course “Architecture and Urban Design” in any semester:
  - (i) but who fail on the first attempt in not more than one other core course in any semester may be permitted to present themselves for re-assessment in the same course before the commencement of the next academic year. Those who fail in the second attempt shall be permitted to proceed to the subsequent semester of the curriculum and to present themselves for re-assessment in the same course only once more in the following academic year;
  - (ii) but who fail in more than one other core course in any semester on first attempt shall not be permitted to proceed to the subsequent semester and shall be required to repeat all or part of that year’s curriculum and to present themselves for re-assessment in the following academic year. If they fail again on second attempt, they may be permitted to present themselves for re-assessment only once more before the commencement of the following academic year.
- b) Candidates who have received a failing grade in a core design course “Architecture and Urban Design” in any semester shall not be permitted to continue to the next semester and must repeat the course.
- c) Candidates who have failed one or more elective course(s) in their first attempt may be required to enroll in the same or an alternate elective course(s) in the following year to make up the failed course(s). Candidates failing in elective course(s) will not normally be offered an opportunity for re-assessment without re-enrollment in the same or an alternate elective.
- d) Candidates who have failed in any course at the third attempt shall be recommended for discontinuation of studies under the provisions of General Regulations G12.

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**Award of degree**

**Ar82** The degree of Master of Architecture may be awarded with Distinction at the discretion of the Board of Examiners.

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**SYLLABUSES FOR THE DEGREE OF  
MASTER OF ARCHITECTURE  
(MArch)**

*These regulations and syllabuses will apply to candidates admitted in the 2014-2015 academic year and thereafter.*

For the purpose of these syllabuses, the teaching of each course will be conducted within one semester.

**FIRST YEAR: CORE COURSES**

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**ARCH4001 & ARCH4002    Architecture and urban design I and II (15 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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**ARCH4003    Professional practice I (3 credits)**

This course offers students an awareness of an architect's leadership role from project inception, design to construction and completion focusing on the administrative and technical aspects of practices. The scope of the course includes statutory procedure and development control in the areas of land, planning and building; the role of an authorized person in the Buildings Ordinance; types of contracts, tendering procedures and documentation; cost planning, cost control and building economics from the building life cycle; post-occupancy evaluation and facility management.

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

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**ARCH4010    Design and construction communication (3 credits)**

This course introduces the methods by which Architects strategize, rationalize and communicate architectural designs. All Architects use the same drawing standards for communicating their projects to contractors and consultants when they are building. At their root, these standards are techniques of notation. They are abstract graphical encryptions that leave open their precise interpretation and understanding. The conventions for how to assemble and organize these standards varies greatly between every office. An intelligent designer has to edit and prioritize different areas of their design. The set is a reflection of these priorities and is used to make a case for the project's feasibility. In any office whose work is notable, the intention of these documents is to encrypt and codify what are otherwise complex architectural effects into clear methods of construction. Construction communication requires students to work in groups to analyze, remodel, re-draw and formulate communicative strategies for innovative projects.

Assessment: 100% continuous assessment

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**ARCH4011    Architecture and its discourses (3 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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### **ARCH4012 Design and technology of sustainable buildings (3 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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## **SECOND YEAR: CORE COURSES**

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### **ARCH5001 & ARCH5002 Architecture and urban design III and IV (15 credits each)**

ARCH5001 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 : ARCH4001, ARCH4002

Field trips may be required for the course

Assessment: 100% continuous assessment

ARCH5002 concludes the architectural curriculum by means of a thesis project. Candidates are required to conduct a self-directed design project under the supervision of a faculty member. 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 field of architecture.

Pre-requisite : ARCH5001, ARCH6127

Field trips may be required for the course

Assessment: 100% continuous assessment

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### **ARCH5003 Professional practice II (3 credits)**

This course offers students an understanding of the power, responsibilities and liabilities of the architect in practice, covering contractual obligations, professional conduct and legal responsibilities. Topics will include understanding of an architect’s agreement with the client and marketing; professional ethics and judgment; practice organization and internal office management; responsibilities of parties under the building contract; awareness of the legal context, customer dispute solution and professional liabilities;

environmental law and barrier free accessibility.

Pre-requisite: ARCH4003

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

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### **ARCH6127    Research seminar (3 credits)**

This course teaches research methods in architecture and urban design 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 proposal for an independent research and design project. The proposal should state a clear position in relation to contemporary architecture. Course format includes lectures, discussions, as well as individual research and writing.

Pre-requisite: ARCH4001, ARCH4002

Assessment: 100% continuous assessment

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## **FIRST AND SECOND YEAR: ELECTIVE COURSES**

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There are six categories offered by MArch as well as other course(s) in the Faculty of Architecture, within each of which there are a number of courses available for selection by candidates in the Master's curriculum. These courses may be taken in either the First or Second Year:

- I:      History and Theory
- II:     Urbanism and Habitation
- III:    Technology and Sustainability
- IV:    Digital Media and Design Computation
- V:     Practice and Management
- VI:    Independent Studies

1. Candidates shall be guided in selecting these courses. It should be noted that not all courses in Categories I, II, III, IV, V & VI would be offered every year and that new course(s) may be introduced in any year.
  2. Students may not take more than two courses from any one of Categories, I to V; and a maximum of one course in Category VI Independent Studies offered within the MArch curriculum or within the Faculty of Architecture.
  3. 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.
  4. Choice of other courses offered in the Faculty of Architecture 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 syllabuses for their course descriptions.
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<b>CATEGORY I: HISTORY AND THEORY</b>
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### **ARCH5106    The modern movement and beyond (3 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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### **ARCH5107 Vernacular architecture of Asia (3 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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### **ARCH5114 Architecture and memory (3 credits)**

This course introduces students to a broad and critical approach in the making and memorializing of our built environment and cultural landscapes. With an increased focus on appropriateness and conservation in architecture and the city today, it is imperative for students and architects to come to terms with the arguments, philosophies and genealogies leading up to the formulations of building practices and design methods in architecture. Readings for this course include foundational texts from interdisciplinary fields of philosophy, literature, political science, theology, anthropology, sociology, psychology, history, geography, fine arts, journalism, architecture and urbanism. The socio-political impetus behind these operative fields of memory reminds us that humanity often seeks to control and manipulate how our built environment works, and it is precisely the realms of imaging and the imaginary that are most susceptible to such exploitation. This course aims to survey and position each of these discourses towards the way we design, conserve and reconstruct architecture and the city.

Assessment: 100% continuous assessment

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### **ARCH5115 Architectural histories (3 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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### **ARCH6111 ReBuilding utopia: visions of architecture in the post-war world (3 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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### **ARCH6112 Modern architecture and the visual realm (3 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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### **ARCH6220 Research seminar in visual cultures (3 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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### **ARCH6221 Topics in modernism (3 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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### **ARCH7120 The genealogy of contemporary paradigms (3 credits)**

This seminar module aims to map the historical and theoretical background, as well as a possible future, to contemporary design discourses and concepts associated to the prevalent methodologies inherent in today's design and production technologies, while confronting the imminent intellectual challenge facing

our generation of architects: To discover the theoretical, cultural and social implications of our new computational practices. Through a survey of paradigms, their historical lineages, trajectories and seminal shifts, this seminar explores new and emerging theoretical knowledge emanating from critical and social theory, philosophy, the nascent arena of computational theory, mathematics, biology and the complexity and natural sciences. The primary references for this seminar will be a series of historical and contemporary texts, with links to spatial, material, architectural and urban examples. Students will engage in presentations, debates, writing short texts, and the making of a book as the shared outcome of the seminar.

Assessment: 100% continuous assessment

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### **ARCH7122      Topics in architectural history and theory (3 credits)**

This course gives students the opportunity to further explore specific issues and topics in architectural history and theory.

Assessment: 100% continuous assessment

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### **ARCH7123      Buddhism and architecture: a historical perspective (3 credits)**

Based on the teachings of the Nyingma School of Tibetan Buddhism, this course is an interdisciplinary study of Architecture and Buddhism using physical buildings to explain Buddhist philosophies. The Vimalakirti Sutra says, “All the different kinds of earthly desires are all the seeds of the Buddha”. The course will begin with an introduction to the Nyingma School of Tibetan Buddhism and clarification of the relationship for the three schools of Madhyamaka, Yogacara and Tathagatagarbha (Buddha-nature). Subsequently, spirituality is explained and discussed in each of the three schools of Madhyamaka, Yogacara and Tathagatagarbha illustrated with examples from the study of architecture like architectural styles, theories of architecture, functionality, historical references and construction technology. The spirit of modernism, technology, symbolism, sustainability and humanity in architectural studies are revealed to be embraced in corresponding views of various Buddhist philosophies from the three schools of Madhyamaka, Yogacara and Tathagatagarbha with reference from Sutras and Shastras. The course will also cover Buddhist Architecture in Asia such as India, China (including Tibet) and Japan etc.

Assessment: 100% continuous assessment

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### **ARCH7126      Cities and specificities (3 credits)**

This elective seminar course speculates upon the ramifications of computationally-driven design and production technologies, for the vast scale of the contemporary urbanism. An important paradigm which had emerged as a result of the Industrial Revolution was the Fordist assembly line model of production, which had, in turn, contributed immeasurably to standardisation and mechanisation of cities. Just over a century ago, the German Werkbund introduced a new potential to manufacture repeatable components of products through mass production made for mass consumption. As an effect of mass production and standardisation, the industrial city began to take on repetitious qualities, both within a city, and as well, cities began to increasingly share characteristics. Modernism was propelled by the mass production of architecture, which in turn, had perpetuated a generic approach to city formation and expansion. It is now evident how twentieth century mass production failed to achieve sufficient variation and differentiation to express the world's diversity and heterogeneity. At the core of the ambition of so-called non-standard design, lies a critique of ubiquity, universality, and monotony, of the modernist industrial paradigm. Cities are inextricably tied to a society's model of production, and the prevalence of generic urbanism, which can be found anywhere and everywhere, comes out of the legacy of globalised Fordist mass production. Seminar sessions will focus on the paradigm shifts occurring from the consolidated regimes of standardization and mechanization of the twentieth century, towards the potential of new, non-standard, custom fabrication methods, for cities in the twenty-first century.

Student-led presentations and class discussions will investigate relations of the universal to the particular, and the complicit relationship of modes of industrial production, on the material, spatial and political form of cities. Readings are selected from various discursive domains of urbanism, critical and cultural theory, computation and manufacturing. This seminar flirts with topics in globalisation, regionalism, neo-traditionalism, identity and iconicity, through an understanding of the inherent complexities of urbanism. Coursework includes the graphic and metric analysis of the attributes of a series of cities around the world, documenting their particular morphologies, massing, sections and skylines.

Assessment: 100% continuous assessment

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CATEGORY II: URBANISM AND HABITATION
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**ARCH5103 Housing in urban development (3 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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**ARCH5105 The design of Chinese cities (3 credits)**

The course looks into the basic physical organization and development of traditional, colonial and contemporary Chinese cities. It aims to introduce methods in understanding how built forms, particularly urban public spaces and city fabric, express certain aspirations of a culture, and how culture itself conditions their physical shape. It also addresses the issue of urban transformation: how cities took the shape they did? What and why have they changed from their past forms to the present shape?

Field trips form an integral part of the course.

Assessment: 100% continuous assessment

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**ARCH5110 Topics in urban studies (3 credits)**

This course gives students the opportunity to further explore specific issues and topics in urban design and planning.

Assessment: 100% continuous assessment

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**ARCH5111 Contemporary urbanism (3 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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**ARCH6129 Inter cities (3 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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### **ARCH6219 Globalization and resistance in architecture (3 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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### **ARCH7220 Case studies of urban development in Hong Kong (3 credits)**

Although Hong Kong has a relative short history of development as compare to other major cities in the world, but due to political, geographical, cultural and environmental factors, it has become the unique model of a high density metropolis. This course aims to allow students to examine and research on real cases of urban development which have led to its present phenomenon.

Aspects of studies include:- government policies, laws in development controls, housing, urban renewal, heritage preservation, sustainability issues, infrastructure supports, harbour front enhancement etc. will be discussed. Students are expected to analysis and participate with assignments of particular topics of their choice in relation to the course.

Assessment: 100% continuous assessment

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<b>CATEGORY III: TECHNOLOGY AND SUSTAINABILITY</b>
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### **ARCH4005 Building structures and systems (3 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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### **ARCH5303 Sustainable building systems (3 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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### **ARCH5309 Design research on architectural sustainability (3 credits)**

This course focuses on new and more precise understandings of the way in which architects design and work with principles of sustainability. It foregrounds design research and looks at the “architectural” use of various energy-related building technologies. Students will be introduced to critical and noteworthy texts underpinning the more general relationships between architectural design and technology. 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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### **ARCH5312 Materials, services and structure (3 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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### **ARCH5313 Nonspace: materials, processes, and constructions (3 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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### **ARCH5316 Design research on architecture and the environment (3 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 predominate 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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### **ARCH5406 Community building workshop (3 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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### **ARCH6115 Topological structures (3 credits)**

This intensive workshop focuses on two main objectives. The first one concentrates on a practical investigation on topological surfaces and their spatial properties to expand the language of architecture. The second one addresses the issue of parts to whole and the question of constructability. Where in the first part students will learn how to draw and construct intricate surfaces digitally using software packages like Maya and Rhino, the second part focuses on the parametric discretization of these morphologies and later how to digitally manufacture them.

Assessment: 100% continuous assessment

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### **ARCH6123 Topics in architectural technologies (3 credits)**

This course gives students the opportunity to further explore specific issues and topics in architectural technologies.

Assessment: 100% continuous assessment

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### **ARCH6126 Building technology and prospects (3 credits)**

The intention of this course is three-fold. First, for students to learn about existing building technology beyond conventional building systems such as mechanical, electrical, plumbing, fire services, etc., and how such technological advancement has been changing the design and construction industry, the environment, as well as users' experience. Second, to inspire and encourage students to develop a vision of the future of technology, its application to/integration with architecture, and its interface with users and environment. Third, for students to explore how technology is going to bring innovation to

sustainability design, and how individuals or companies can use building technology to make a positive impact to architecture and the environment.

Assessment: 100% continuous assessment

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**ARCH7301 Sustainable design methods (3 credits)**

This course gives students the opportunity to further explore specific issues and topics in sustainable building technology. The course will present precedent projects and case studies and ask students to undertake projects that deal with strategies for sustainable building design.

Assessment: 100% continuous assessment

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**ARCH7302 Topics in advanced structures (3 credits)**

This course gives students the opportunity to further explore specific issues and topics in advanced structural systems for architecture. The course will present precedent projects, case studies and strategies for integrating structural principles into the design process. Course topics may include, but are not limited to the study of established and exploratory structural systems, construction materials, and fabrication techniques.

Assessment: 100% continuous assessment

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CATEGORY IV: DIGITAL MEDIA AND DESIGN COMPUTATION
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**ARCH5302 Computer graphics for architects (3 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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**ARCH5304 The computer in architecture (3 credits)**

An introduction to computer-related tools and techniques useful to architects in professional practice. It includes the use of computers for office automation and management as well as various design and analysis applications in architecture and related fields.

Assessment: 100% continuous assessment

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**ARCH5305 Computer-aided architectural design methods (CAAD Methods) (3 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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**ARCH5308 Topics in advanced technology (3 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.

Assessment: 100% continuous assessment

### **ARCH5311 Digital media and methods (3 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. Students who did not graduate from the BA(AS) programme at HKU and do not have a background in digital media and methods are highly encouraged to enroll in this course in their first semester in the MArch programme.

Assessment: 100% continuous assessment

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### **ARCH5314 Parametric structures (3 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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### **ARCH5317 Making ways and ways of making (3 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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### **ARCH6114 Paradigms and prototypes (3 credits)**

This one term graduate seminar module develops knowledge and skills related to the design of prototypical models of architecture and urbanism, by means of students' analysis and evaluation of recent, innovative, seminal design projects, and their related techniques, strategies, discourses, and effects. The aim of this seminar course is to provide a thorough background to the theoretical knowledge related to work pursued in contemporary avant-garde design studios emphasising computational design and fabrication techniques. The seminar creates an important opportunity for students to reflect upon and evaluate their own ongoing design objectives and interests, in relation to recent design projects, and their affiliated techniques, concepts and discourses.

Assessment: 100% continuous assessment

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**ARCH6135 Explorative architecture techniques (3 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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**ARCH6414 Architecture by nature (3 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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CATEGORY V: PRACTICE AND MANAGEMENT
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**ARCH5201 Aspects of contract management (3 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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**ARCH5204 Principles and practices of building codes (3 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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**ARCH5318 Synthetic information modeling for architectural practice (3 credits)**

The development of information modeling has changed contemporary architectural practice profoundly, from design concepts to project management and construction. Rather than using information modeling techniques as execution of design ideas, this course aims to teach students how to create, produce, manage and communicate design information effectively and efficiently in the context of architectural practice. The information modeling platform for the course is Digital Project Gehry Technologies, one of the most sophisticated digital software currently available in architectural industry. The essential objective is to equip students with the knowledge and skills to apply information modeling (from

fundamental to advanced level) to architectural design for synthetic production information and construction documentation. We will emphasize the underlying thinking and systematic process during the various activities, e.g. software demonstrations, case studies, office visit, hands-on exercises and design charrette. Students are encouraged to use the tools in their own ways as per individual design challenges after following the standard demonstrations. At the end of the course, students are expected to use Digital Project to deliver a small assembly of timber architecture in both digital and physical formats. Assessment: 100% continuous assessment

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### **ARCH6130 Building information modeling in architectural practice (3 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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### **ARCH6131 Introduction to building information modeling and management (3 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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CATEGORY VI: INDEPENDENT STUDIES
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### **ARCH5405 Independent studies (3 credits)**

The objective of this course is to allow candidates to pursue independent studies to strengthen critical analytical skills and reflexive learning. With the permission of the supervisor, students may choose reading materials that focus on the exploration, analysis and/or revelations on concepts in architecture and urbanism.

Assessment: 100% continuous assessment

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