

Undergraduate Course Map

Year / Term	Culture	Structure	Design	Representation	
1 / A	History of World Architecture	Wood Ecology and Technology	Design Studio 1: Small Structure	Representation 1: Hand Drawing	
1 / B	History of Canadian Architecture	Building in a Cold Climate	Design Studio 2: Wood House	Representation 2: Computer-aided Design	
2 / A	Landscape	Introduction to Structures	Design Studio 3: Multiple Housing		<i>Elective</i>
2 / B	Urbanism	Steel and Concrete	Design Studio 4: The Work-place		<i>Elective</i>
3 / A	World Architecture	The Well-tempered Environment	Design Studio 5: Sustainable Design		<i>Elective</i>
3 / B	Materials and Cultures		Design Studio 6: Options Studio	Representation 3: The Architectural Project	<i>Elective</i>
4 / A	Public Agency		Design Studio 7: Northern Studio	Representation 4: Architect's Writings	
4 / B	Modern Architecture		Design Studio 8: Comprehensive Design	Representation 5: Advanced Design Prototyping	<i>Elective</i>

Graduate Course Map

Year / Term	Design	Professional Development			
1 / M	Graduate Studio 1: Directed Research	Regulatory Framework	Professional Practice	Specifications and Quantity Surveying	<i>Specialist Elective</i>
2 / M	Graduate Studio 2: Thesis Proposition				<i>Specialist Elective</i>
3 / M	Graduate Studio 3: Thesis Development				<i>Specialist Elective</i>
4 / M	Graduate Studio 4: Thesis Documentation and Presentation				

Undergraduate Program

First Year

Term 1A

History of World Architecture

This course offers a general introduction to the history of architecture. The course will take the position that architecture is a historically specific concept about the symbolic value of space and buildings. The course operates with a large cultural scope but does not presume to provide a universal or global history. Two of its 'expanded' aims are to treat the architecture of the three monotheistic religions equally and to represent something of old-world/new-world relations. Considerable attention will be paid to the origins and development of an autonomous theoretical tradition in architecture, as represented in its characteristic form of literature, the treatise. The course seeks to represent not just the achievements of professional designers of buildings – which would be simply anachronistic for much of the period covered - but also the ambitions of architecture's ideologues, and something of the experience of architecture's 'users' - those who stand in relation to buildings in work, worship and dwelling.

Wood Technology and Ecology

This course provides a comprehensive overview of wood from forest to framing and beyond. It will focus on species important for building, especially those of northern, boreal forests. The course will provide both an introduction to forest ecology and to the forest products industries. The overarching narrative of the course will be the transformation of wood, through a progressive application of technology, from large, 'noble' timbers to an element of a composite construction. It will explicate the tension between wood, an organic material, and the dictates of modern, rational building production. To this end, it will show the various techniques by which wood is processed, and discuss those limits that still remain.

Design Studio 1: Small Building

Architectural design will be introduced through a series of short studies that provide opportunities to develop basic design skills, include free-hand drawing and site analysis. The student will learn to make and present constructive propositions in relation to a real site and an elementary function. These exercises are synthesized in the term's project, which is to design a small, environmentally complex building.

Representation 1: Hand Drawing

This course provides an introduction to the specific forms of graphic exploration and communication commonly used by architects. The course combines an overview of traditional hand-executed forms of graphic representation with exercises designed to develop individual manual techniques. The student will be taught to distinguish analytical, instructional, and pictorial/rhetorical modes of drawing. The scope of study includes both orthographic drawing modes and various forms of synthetic spatial representation, from perspective sketches to flow diagramming.

Undergraduate Program

First Year

Term 1B

History of Canadian Architecture

Canadian architecture will be presented as the product of a meeting of three cultures – First Nations, French and English – in a rich landscape with a demanding climate. Architecture's role in settling/colonizing a vast territory will be discussed, as will its continuing role in national identity formation and its place in an era of diverse, trans-national cultures. Regional variations will be discussed from both cultural and climatic perspectives.

Building in a Cold Climate

This course introduces in detail the specific technical requirement and issues for building effectively in a cold climate. It draws upon research conducted and published by the National Research Council Buildings Division between 1960 and 1988, supplemented by other material specific to northern climates, where it is available. The focus is primarily on the building fabric and its features; mechanical systems will be examined in a later course. Examples will be predominantly domestic in scale.

Design Studio 2: Wood House

This studio engages the tectonics and history of wood construction. It provides structured opportunities to develop representational skills, and to become familiar with some exemplary uses of wood in single-family house building. Finally, it requires the planning and design of a house complete with a materially specific idea of construction.

Representation 2: Computer-aided Design

This course will introduce the computer-aided drawing system AutoCAD, various graphic design programmes (Adobe Flash, Illustrator, InDesign, Dreamweaver) and some current three-dimensional modeling software (Rhino, 3D Studio MAX, Sketch-Up). Alongside this introduction, which is to take the form of tutorials, a series of lectures will describe the history and methods of computerized rendering programmes. Particular attention will be paid to the consequences of these new systems for the representation and perception of architectural space. Since these programmes are updated regularly, the object of study will be the common basis of computerized drawing rather than the working methods of any one system. This course is preparation for the next (elective) representation course, which offers a directed tutorial in AutoCAD.

Undergraduate Program

Second Year

Term 2A

Landscape

Landscapes, like buildings, give aesthetic satisfaction while offering a real source of profit and wealth. Historically, holding and apportioning territory has been one of society's most enduring matters, the basis of the order of the family and community, and often the grounds of political enfranchisement. Land may be natural, but landscapes are deeply cultural. This course will examine the specific relationship to land and landscape that originated in Great Britain, was transferred to North America by colonization, and which developed a significant original and distinct national identities in America and Canada. The course will thus be concerned with relations between the old and new worlds, and typological interpretations of North America. The relationship between national landscapes and regional experiences will be an important topic of discussion. The course is by no means restricted to examining the work of professional landscape architects, but will consider the thoughts and undertakings of gardeners, amateur enthusiasts, architects, painters, writers and photographers.

Introduction to Structures

The fundamental structural properties of buildings will be examined, including the various types of loads and forces such as compression, tension, and bending moment. The idea of static equilibrium will be explained and the concept of the load path introduced. Some major historical building forms will be investigated, including simple beams, bearing walls, columns, domes, and brackets.

Design Studio 3: Multiple Housing

This studio introduces issues of community either through the design of multiple housing (typically for either students of the elderly) or a place of social assembly. It provides an opportunity for architectural speculation on private, communal and public space, on necessities and needs, and convenience and economy in programming. This studio also promotes reflection on dwelling in society with others.

Elective

Undergraduate Program

Second Year

Term 2B

Urbanism

The capitalist city is a specific cultural form, like the classical polis, or the medieval burg. This course introduces the study of urbanism within the framework of its development since the mid-eighteenth century, when a major qualitative and quantitative change occurred in urban dwelling and organization due to the emergence of the capitalist and corporate mode of (spatial) production. This period largely corresponds to the settlement of North America and the establishment of many new settlements, and thus 'new world' cities will receive particular attention.

Steel and Concrete

Concrete and steel are the two most important materials of modern construction. An architect needs to know how they are made, their structural properties, and how they may be formed. Historically, these materials have inspired quite varied and even contradictory designs. While at times this course will examine each of these two materials independently, the focus is ultimately on their convergence in modern reinforced concrete construction. In addition to developing technical knowledge of the material's properties, the course is concerned with their architectural interpretation.

Design Studio 4: The Work-place

The design of a place of work provides an opportunity to investigate the rational production of space. This entails an investigation of the social role of work, the changing demographics and conditions of the labour force, and its spatial and organizational needs. Can there be a consensus on what defines a humane and sustainable work place?

Elective

Undergraduate Program

Third Year Term 3A

World Architecture

The fact that architects now regularly work simultaneously in many distant places is often treated as a novelty, but historically, architects have often been peripatetic. This course offers a new perspective on architecture's place in the process of globalization by examining architecture as a mode of technology transfer. It challenges the notion that architects are champions of the local and shows how they have often worked to broadly disseminate new ideas in building and to overturn or reform local practices.

The Well-tempered Environment

Modern architects often viewed lighting, heating, ventilation, air-conditioning and acoustics distinctly secondary to such matters as planning and structure, or worse yet, as a threat to their formal ambitions. This attitude has been challenged by the rise of life-cycle costing and other sophisticated forms of benefits analysis, especially those based on occupant welfare and productivity. These studies regularly show that mechanical system operating costs often far exceed fixed capital building costs. This evidence, and the growing ecological movement, has made mechanical systems into a rapidly changing area of design. This course offers an historical perspective on the development of techniques for the management of environmental conditions in buildings as the best guide to a dynamic present practice.

Design Studio 5: Sustainable Design

This studio will explore techniques currently used to design and build ecologically sustainable buildings. It begins with the integration of community values through the design process and will apply the various modes of evaluation presently used to judge the ecological impact of buildings: life-cycle costing, carbon-neutral strategies, embodied energy analysis, and the formal LEED system, which incorporates many of these measures. The focus of the design project will be a mid-size public institutional building.

Elective

Undergraduate Program

Third Year Term 3B

Materials and Cultures

This course offers a world survey of housing issues. It concerns the failure of capitalist societies to produce adequate housing for all citizens, and the response to this fact by architects, designers, activists, historians, communities and the state. Rural migration to urban centres is the great engine of this problem and thus particular attention will be paid to the displacement of indigenous and rural peoples worldwide. To ensure diversity of representation, several lectures will be offered by guests.

Design Studio 6: Options Studio

Options will be provided for the student to select one of three concurrent design studios in which to explore an aspect of architectural design in depth. In contrast to the essentially pragmatic design studios up to this point, the exercises in this term will be distinctly more speculative and explicitly theoretical. To this end, the project will be subject to no limits as to size, complexity or practical value. Each instructor will propose a programme that, though it may share aspects or evaluative methods with other studio sections, will establish its own distinct postulates. The students are expected to interpret the challenge accordingly.

Representation 3: The Architectural Project

This course introduces architectural theory through asking some fundamental questions – such as how (or if) buildings attain/contain presences and ideas (or ideals), how they manifest hope and other desires, and how they express or exert power. It inquires into architecture's problematic, or to put it more simply, it asks, "What is Architecture's job?" This is not a matter of the legacy of buildings, nor of the architect's *métier*, but rather, what function architecture has in society, and in life. The essays and short books read in this course record debate about architecture's efficacy, make propositions about its value, or make exemplary forays into the meaning of architecture in some broad sense. The deliberate choice of writings by historians, critics, sociologists, feminists and philosophers - in short, by anyone but architects themselves – is designed to expose the variety of positions and voices engaged in the discourse about architecture.

Undergraduate Program

Fourth Year

Term 4A

Public Agency

This course parallels a real-life situation in which communication and representation skill and strategies are vital to the successful realization of a project. The capacity to work effectively as a group and in relation to a community will be developed and tested. This practical experience will be augmented with a discussion of recent developments and emerging possibilities in the role of the architect: consultant, advocate, and activist. Part of the practical content of the course is to design and conduct a workshop to introduce elementary and high school students to architectural design.

Design Studio 7: Northern Studio

The student will be engaged in a real-life exercise in community organizing and development, client design negotiation and design/build in a remote northern community. Issues include community consultation and participation, project management, materials procurement, and construction. The project will be a small to medium scale public building, to be built largely of wood. Pre-planning of subsequent projects (needs assessment, consultation) will also be undertaken, signaling the long-term commitment of the school and participants.

Representation 4: Architect's Writings

Adolf Loos once famously defined an architect as a 'master mason who has learned Latin.' This description may not be entirely exaggerated: it could be easily demonstrated – at least since the renaissance – that those architects who became prominent in their day and subsequently entered the record of history were those who expounded their ideas of design in writing. This course offers a general introduction to the writings of several twentieth-century architects, translated into English and collected in anthologies. It provides a basis in primary documents for understanding the architectural ideas of the modern era.

Undergraduate Program

Fourth Year

Term 4B

Modern Architecture

This lecture course will expound the origins, development, successes and failures of modern architecture. It will show how the modern movement developed in response to the problems and possibilities created by development of rational technique. These changes were of a scope – exemplified by the metropolis - that could not be accommodated in the traditional forms derived from historical styles, but demanded instead a thorough re-conceptualisation of building and its meaning. In the modern era, architecture became a sort of social technology, directed largely by an idea of environmental positivism, and united by a vision of social justice and universal liberty to be achieved through a critical affirmation of technology. The period covered begins roughly with the nineteenth century and continues until the immediate aftermath of World War II

Design Studio 8: Comprehensive Design

The sequence of design studios concludes with a term-long demonstration of the ability to design a building complete in all relevant respects, from its cultural intentions through planning, structural design, sustainability assessment, and the finer aspects of its physical execution. Both the design and the presentation must be compelling and persuasive. The building will be a medium scale institutional building with a cultural purpose. The LEED system will be engaged to evaluate the design performance.

Representation 5: Advanced Design Prototyping

In architectural design, millwork refers to all types of cabinetry, including some forms of detached furniture of a distinctly architectonic character, like dressers and sideboards. The category is also sometimes called casework, from the prevalence of a hard shell or case that protects various contents, from files to clothing or food. Because millwork tends to reproduce architectural issues at a smaller scale, architects have often approached it as a distinct area of research, one with a strongly emblematic potential. Millwork raises important issues around the relationship between craft and industrial fabrication, between custom design and standardization that you will be expected to manage in practice. To be able to design casework is not only an essential architectural skill, it is also an engaging design task, one seldom undertaken in architecture schools.

Elective

Graduate Program

Term M1

Graduate Studio 1: Directed Design Research

This studio will offer three directions for study: environment, materials, and society. By choosing one of these options, the student will declare a general area of study that will carry through to the end of the M.Arch degree. Each student will work in a small group with a single instructor presently pursuing research on the same topic. The instructor will devise a programme of study and a design problem and direct the project to the degree required by the amount and quality of the student's initiative. The term provides an opportunity to explore ideas and develop a working understanding between student and professor prior to declaring the topic and selecting a thesis advisor.

Regulatory Framework

This course will provide a comprehensive overview of the acts and codes that regulate building in Ontario and define the professional responsibilities of architects in Canada. The course will be primarily concerned with five articles of legislation: the Ontario Building Code (2006 version) the Planning Act, the Construction Lien Act, the Fire Code and the Architect's Act. The actual content and details of these documents will be examined. The course will focus on the implications of these acts and codes, first for the design of buildings in Canada, and secondly, for the conduct and organization of the architectural profession.

Professional Practice

This course will introduce the basis of professional architectural practice in Canada. Architecture is a self-governing profession that operates within an explicit legal code, and that endorses a set of professional ethical standards. To perform their work, Architects must enter into a variety of fiduciary relations, primarily with their clients, but also with contractors and construction managers, and more abstractly, with the public. This course aims to provide an explanation of the various roles an architect may be asked to assume in design. It also outlines the nature of risks inherent in designing buildings and professional liability. The course describe the various options for architects to work together in formal partnership, the rules of professional conduct, and the forms of contract that an architect will have to write, review and abide by. Client-architect relations and legal obligations in budget management will also be examined.

Specifications and Quantity Surveying

This course presents two technical aspects of architectural practice: the writing of contract specifications and the calculation of building costs. Specifications are part of contract documents and must be carefully coordinated with working drawings. Writing them effectively depends on a thorough knowledge of product literature and a close liaison with industrial representatives. Quantity Surveying is the general title for all methods of forecasting costs. As the name implies, it is based on measurement of quantity, but it also requires a thorough knowledge of labour markets. These two technical skills are essential to both the performance of buildings and success in architectural practice.

Specialist Elective

Graduate Program

Term M2

Graduate Studio 2: Thesis Proposition

During this term, the student will advance a detailed proposition for the thesis to be complete in the following year. The proposal may be embodied on a real site or it can be entirely theoretical, but in either case, it must be (self) critical, constructive, and adhere to the highest standards of clarity in presentation. It is expected that the thesis will be informed by a comprehensive knowledge of contemporary theoretical issues, debates, and fully apprised of classic and new methods of design. The proposition stage requires that that all assumptions and predicates be externalized, examined, and prepared for critique.

Specialist Elective

Term M3

Graduate Studio 3: Thesis Development

During this term the student will carry out the work required by the thesis proposed the previous term. There will be a major review at the end of the term, and the following term will be devoted primarily to revision, documentation and critical examination. To substantially complete the thesis work means that any experiments must be complete and results digested, conclusions must be drawn from any empirical research, and that building propositions must be finished to the level of detail, with full exposition of their performance criteria. The work must be conducted in an orderly fashion at all times, with complete transparency of documentation. Students may wish to blog their work to the web, for example, posting new documentation or significant results so that classmates, co-researchers, advisors, undergraduate students and other interested parties can follow the work. All research conducted at the school will be archived and made readily available, so work must be developed at all times with consideration for accessibility.

Specialist Elective

Term M4

Graduate Studio 4: Thesis Documentation and Presentation

The final term in the thesis allows for comprehensive documentation, criticism and review. The thesis must be completed, including all revisions called for at the end of the previous term, and submitted by the mid-point of the term. An external examiner, to whom the thesis documents must be sent at least four weeks in advance, will review the thesis work. In an oral presentation, the student will answer a number of questions formulated in advance by the external reviewer. All final reviews will be open to the entire school.