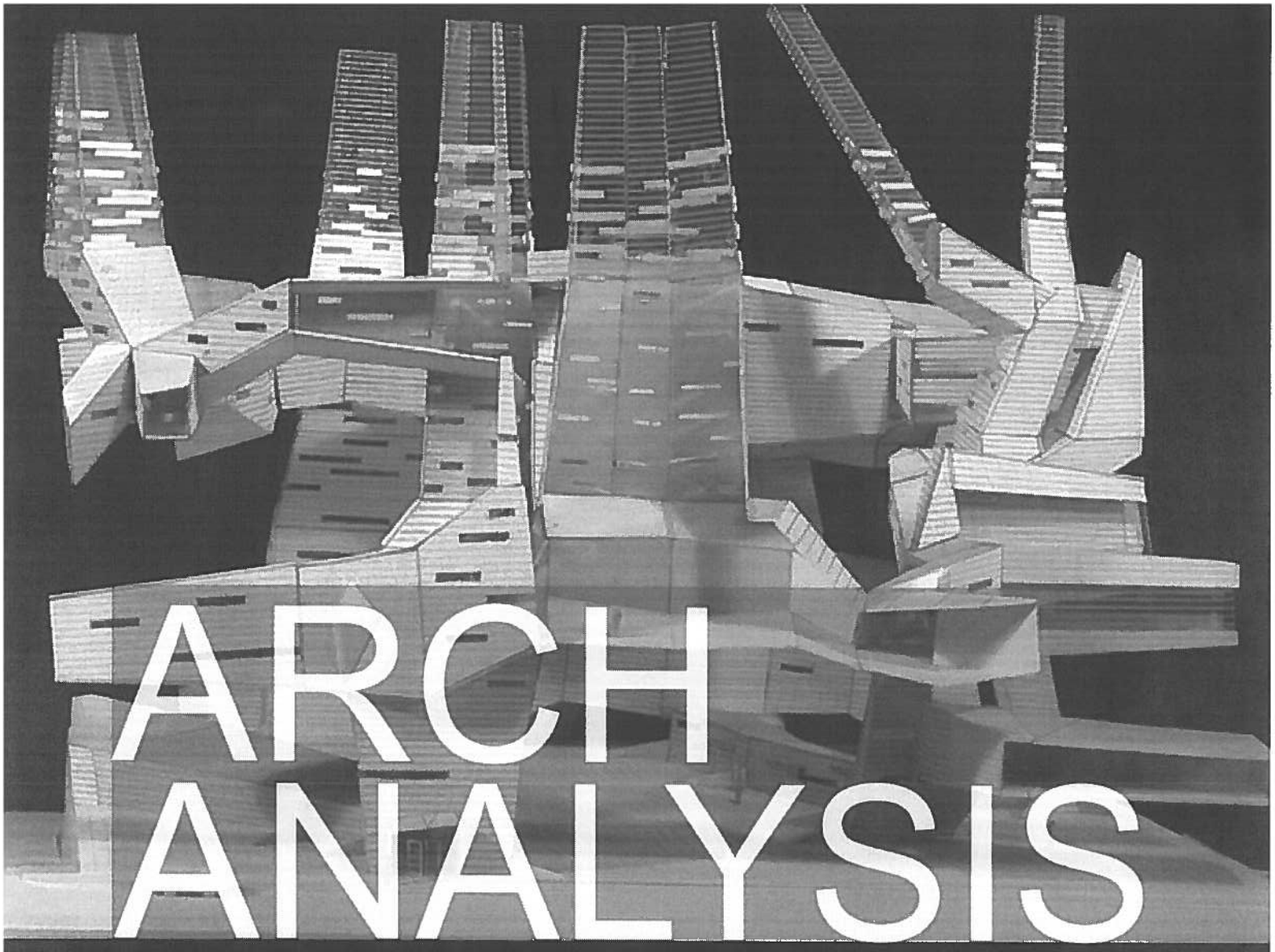
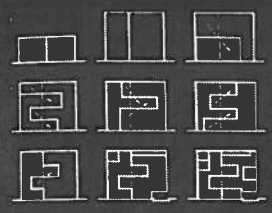
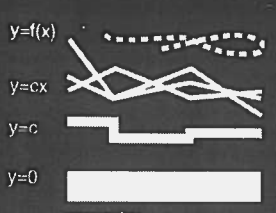
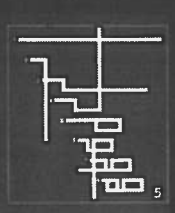


ARCH ANALYSIS

Research Methods + Diagrammatic Strategies

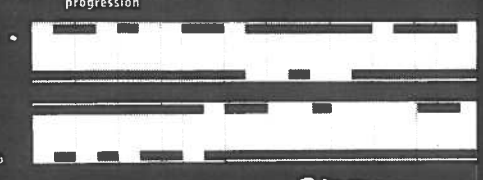


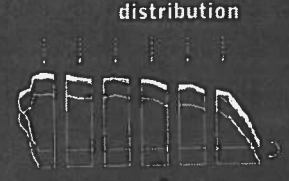




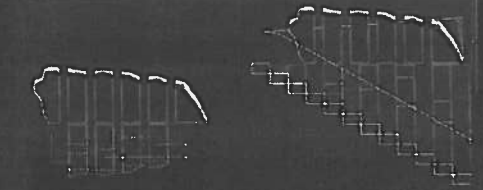
progression

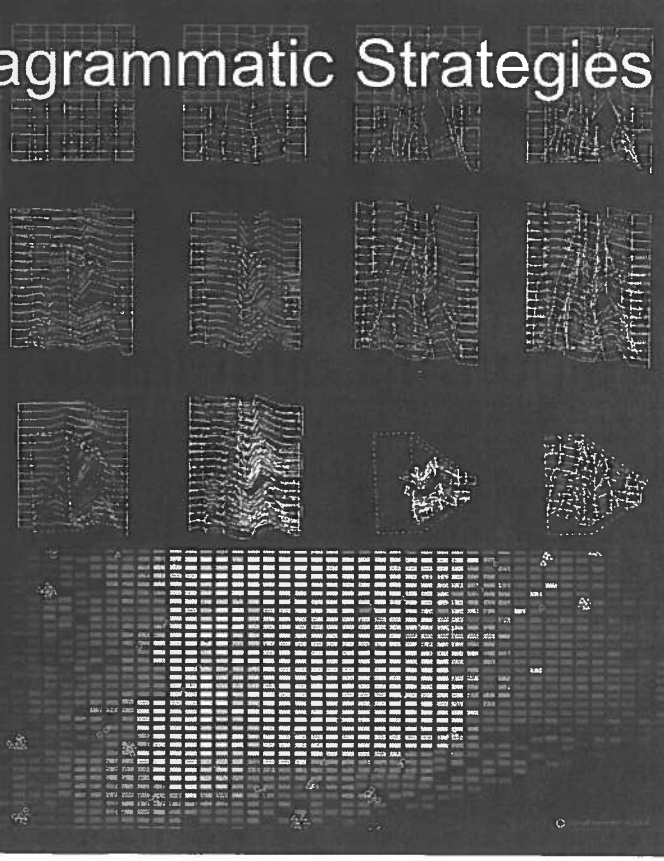
distribution





pieces





Title: ARCH ANALYSIS_ Diagrammatic Strategies and Research Methods
Instructor: Assoc. Prof. Dr. Mona El Khafif
Course: Architecture Analysis 610 Graduate Seminar

CONTENT ABSTRACT//

"A diagram is a graphic assemblage that specifies relationships between activity and form, organizing the structure and distribution of functions. As such, diagrams are architecture's best means to engage complexity of the real. The diagram doesn't point inward, towards architecture's interior history as a discipline, but rather turns outward, signaling possible relations of matter and information. Since nothing can enter architecture without having been first converted into graphic form, the actual mechanism of graphic conversion is fundamental. The diagram may be the channel through which any communication with architecture's outside must travel, but the flow of information along these channels will never be smooth and faultless."

[Stan Allen, Diagrams]

As a medium and graphic device diagrams play a double role in the field of architecture and design. A diagram operates as a notation and representation of the real to analyze, recognize and reflect on architecture and secondly it operates as a machine of action to produce and generate architectural compositions. Diagrams diagnose and identify but they likewise operate as tools for production. What Gilles Deleuze calls the "abstract machine" is the operative nature of the diagram that channels processes and actions.[1]
To this effect diagrams are our graphic language to analyze and generate architectural space. They are – as Stan Allen points out – essential to our discipline. They are abstract but precise; diagrams draw from the real and extract operational strategies to expose the complex compositions of architecture. Simultaneously they are rendering an evolution of design actions; they can capture static conditions or dynamic processes as cartographies of movements and trajectories.

A combination lecture and studio/seminar format, this course will examine the conceptual strategies, design tactics and resulting spatial, material and experiential effects behind key works of recent architectural practices. Students will be introduced to the method of diagramming and mapping as a tool to re-engineer and conceptualize a selected precedent throughout the term.

The lectures will comprise a cross section of analytical drawing methods, and a review of design concepts, drawings and architectural results manifest in building examples authored by select architects. This course will look at drawing and analysis as methods for discovery and interpretation. It is based on the premise that drawings are non-objective translators of the things they represent; and as such, become instrumental in both the cognition and proposition of architectural and urban space.

The studio/seminar component will involve three main assignments. The first is an analysis of selected architectural case studies, moving from initial research and documentation, toward a thorough understanding through analytical diagramming of the work's spatial nature and effects. The second assignment is an introductory spatial analysis of the urban or environmental context and the last assignment draws a synthesis that will include a written essay.

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[1] Manuel Gausa, *Diagrams*, in The Metapolis Dictionary of Advanced Architecture: City, Technology and Society in the Information Age, M. Gausa, V. Guallart, W. Mueller, F. Soriano, F. Porras, J. Morales, Susanna Cros (coordinator) Actor Publisher, Barcelona, 2003, p. 162-163

SCHEDULE //

MONTH	WEEK	WEDNESDAY	WEEKLY EVENTS
SEPTEMBER Orientation Week	**0**		**4/9**
Classes Begin	**1**	**10/9** **INTRODUCTION ARCH ANALYSIS** **M1 TEXT** Hand-out Assignment A1	**11/9** **BEGINNING OF THE SEMESTER** All School Meeting
	2	**17/9** **PRECEDENT PRESENTATION** Students input **LECTURE: METHOD 1** Lecture, Reading, Discussion//	**15/9** **LECTURE//** Louis Becker // Henning Larsen Architects
	3	**24/9** **LECTURE: METHOD 2** Lecture, Reading, Discussion//	**25/9**
OCTOBER	**4**	**01/10** **LECTURE: DIAGRAMMATIC STRATEGIES AS CONCEPTUAL TOOLS** Afterwards Pin-up first set of Diagram	**02/10**
	5	**08/10** **LECTURE: SYSTEMS OF TRANSCODING** Afterwards Pin-up first set of Diagram	**09/10** **LECTURE//** Nader Tehrani // nadaa
	6	**15/10** **DESK CRITS**	**16/10** **LECTURE//** Jesse Reiser // RUR
	7	**22/10** **MID REVIEW** Presentation of A1, Afterwards Path to Practice Symposium	**24/10**
	8	**29/10** **M2 CONTEXT** Hand-out Assignment A2 **METHOD 3** Lecture, Reading, Discussion//	**30/10** **LECTURE//** Joel Sanders // JSA Architects
NOVEMBER	**9**	**05/11** **METHOD 4** Method Lecture Context Analysis, Desk Crits	**06/11**
	10	**12/11** **DESK CITS**	**13/11** **LECTURE//** Sean Lally Weathers //
	11	**19/11** **LECTURE: TEXT CONTEXT RELATIONSHIPS** Pin-Up, Reading//	**20/11** **LECTURE//** Meejin Yoon // Howeler & Yoon
	12	**26/11** **M3 SYNTHESIS** Hand-out Assignment A3 Synthesis **LECTURE: SYNTHETIC MODELS** Pin-Up, Reading//	**27/11**
DECEMBER	**13**	**03/12** **DESK CRITS** Send in first Essay Draft	**04/12** *Finals Exams Start*
	14	**10/12** **FINAL REVIEW** Poster Presentation and reworked Essay Draft	**11/12**
	15	**17/12** **FINAL SUBMISSION** Digital Submission	**18/12**

The schedule is open for adjustments. Please see schedule announced in assignments. Changes will be discussed during class time. Further information: http://gradcalendar.uwaterloo.ca/page/GSO-Academic-Deadlines-and-Events

COURSE OBJECTIVES AND STRUCTURE//

Using a precedents critical to your thesis research as a vehicle, this course will examine various modes of analysis - via 2D and 3D diagrams, and writing. A combination of desk crits, pin-ups, lectures and discussions, the class exposes students to a wide range of works from recent architectural practice, expanding students' knowledge of the discipline and enabling them to position their research and design in a broader architectural discourse. Introducing techniques for description, abstraction and transposition, the course will look at diagramming methods as tools for visual research, interpretation, speculation and extension into design.

The course is based on the premise that diagrams are selective, quasi-objective visualizations of the content they represent. And further that the abstractions that diagrams embody can allow them to partake in a transformative process that leads beyond precedent to novel propositions about architectural and urban space. Students learn to develop diagrams as a description of potential relationships between elements. Through drawing, students reveal their own understanding of how a building is configured in its internal and external relationships. The diagram, and analysis itself, becomes a tool for identifying and visualizing operational strategies, allowing them to become generative within the design process.

In synergy with students' current thesis research or design studio, the course will be structured around drawing assignments and a reflection on the material gerenarted through the visual analysis. Students will work individually and will suggest a precedent at the beginning of the semester which will be analyzed over the course of the semester. This project will be scanned in a variety of ways, using different 'cuts' to expose the physical and perceptual systems, as well as the conceptual and spatial strategies in operation. The semester-long drawing process begins with selective editing of information that involves the tracing of specific elements of each project. From there, the class will develop methods of abstraction into diagrams that extract critical relationships, leaving behind the representational and familiar, while calling out with precision a specific understanding of operational relationship within the project. At every step, students will be asked to articulate their understanding of the precedent, in drawing as well as writing. Progressively revealing the complex layers of the physical and material reality, the diagrams will bring forward strategies otherwise unseen: strategies for potential relationships that can become tools for speculation - made available for transposition and transformation.

Arch Analysis Motivation //

This seminar will guide students in the architectural analysis of a precedent. These skill sets are critical for students' design work and thesis research. The course's goals and learning objectives will be supported by an assignment structure and can be described as:

- Introduction and in-depth analysis of a variety of key works from recent architectural practice.
- Ability to investigate architectural works in terms of the systems and spatial / organizational principles employed.
- Ability to verbally and visually describe critical relationships within the ordering systems of a case study.
- The use of drawing and diagramming as analytical tools.
- Abstraction as a way of extracting architectural principles and strategies that can be used generatively in the design process.
- Critical choice of media and method to visually extract and represent the selected information.
- Ability to recognize spatial / organizational principles in a precedent design strategy.

Arch Analysis Course Structure//

The class in held weekly on Wednesday mornings from 9:30 am – 12:30 pm in room 2026. As presented in the semester schedule the seminar sessions consist of lectures, discussions, pin-ups, and desk crits with in class production. The lectures titled Method 1- 4 will present

methods of diagramming and visual analysis offering a tool box of diagrammatic strategies. The methods will be tied back to the drawings produced for the assigments introducing the diagram as a mode for architectural, urban, and environmental analysis. A second cateogy of lectures will introduce students to the theoretical underpinning of diagrammatic strategies and contemporary architectural work. These lectures will likewise introduce operational design strategies utelized by architects. Discussions will include assignment readings, group analysis of student work and participation during th electure sessions.

Arch Analysis Assignment Structure//
The course is structured as a sequence of three assignments that consist of drawing and writing components. Diagrams and datagrams built on abstractions of spatial systems, conceptual strategies, organizational logic, relationships, hierarchies, and underlying data will be produced. These will necessitate the development and deployment of graphic languages appropriate to describing and exposing strategies present in each case study. Each assignment module consists of several tightly framed drawing methods introduced through method lectures. In parallel, students develop a written synopsis of the diagrams, and will use writing as additional mode of analysis. Lectures, selected readings and discussions support each module. The assignments will be conducted in teams of two students. Individual components like writings will be identified in the assignments.

Assignment A1_Object Scan TEXT
The first assignment will start with a selection of a precedent and a complete documentation of the architectural project. Students will be asked to re-engineer the project and to redraw keysets of drawings in 2D and 3D. These original key drawings will serve as a base to reconstruct the project and to generate a cricial set of orginal diagrams originally drafted by each student. Diagramming methods will be introduced through lectures and examples. Students are asked to select adequate methods of diagramming to analyze their projects. In addition diagramming is understood as an evolutionary process in which techniques evolve through application and transformation. Students are invited to develop new diagramming methods based on the material presented. Each set of maps and diagrams will be commented through brief written reflections. Assignment A1 will be presented in the mid review. A series of pin-ups and desk crits will help to develop the analysis.

Assignment 1 – building scans: See *Hand-out Assignment A1*
research, redraw, edit, abstract, 2D, 3D, program

Assignment A2_Environmental Scan CONTEXT
The second assignment is similarily based on the production of orginal diagrams and infographics dealing with the environmental and urban context of the precedent. Location, place, city and urban/landscape context are critical components generating spatial strategies and effecting the architectural project. Though an object in itself architecture is always consdiered as a part of something larger. This relationship needs to be extracted and transcoded. Diagramming and mapping methods will be introduced through lectures and examples. Students are asked to select adequate methods of diagramming to analyze their projects. Each set of maps and diagrams will be commented through brief comments. A series of pin-ups and desk crits will help to develop the analysis.

Assignment 2 – urban/landscape scans: See *Hand-out Assignment A2*
context relationship, organism/environment, density/population, context/history

Assignment A3_ Combined Scan_SYNTHESIS
The final assignment can be understood as a synthesis and reflection of assignment A1 and A2. Some of the material generated is more critical to understanding of the precedent than other material. The editing of this material and the generation of master diagrams that extract

the most important aspects of the architecural analysis will be combined with a 2000 word essay. The essay is not meant to broadly describe the project from secondary literature but to utelize the original material as a base of analysis. Students will present the semester's work at the final review.

Assignment 3 – synthetic scans: See *Hand-out Assignment A3*
Text and context relationship, master diagrams, verbal reflection and analysis

The phases shown in this outline will be updated by formal assignments issued during the term. Details shown here may change according to the development over the semester and students' needs. Students will be asked to submit their work to pbworks on a regular basis.
Students are asked to properly and consistently quote and cite work developed by others. Please use the Chicago Manual of Styles for these purposes. More information under http://www.chicagomanualofstyle.org/tools_citationguide.html

Arch Analysis Students' Participation //
Students will be asked to continually participate in discussions throughout the semester. Readings, pin-ups and lectures are understood as a space to exchange ideas, to ask questions and to encourage the discussion. Students are invited to bring additional resources, books and readings into the classroom. Active participation includes development of course content through independent research.

Arch Analysis Documentation and Learning Resources//
The class will be organized through the ArchAnalysis14 pbwork space. This workspace will be used to post assignments, lectures, readings and bibliography. Students will be invited and will use the workspace to upload their work on a regular basis.
The resulting drawing sequence and data sets for this course will be formatted into a collective resource/book/publication. A template for all graphic work will be provided at the beginning of the semester in form of InDesign template. The collective work will build an accessible archive for Waterloo Architecture students in the future.

BIBLIOGRAPHY

Readings will also be assigned during the semester and up-loaded on the pbworks space 6 - 4 days in advance. Students are however asked to visit the library on a regular basis and to use online archives such as http://www.jstor.org to support the research and precedent analysis.

ARCH ANALYSIS READINGS

• Allen, Stan. "*Diagram Matters*". in ANY 23: Diagram Work: Data Mechanics for a Topological Age, 1998.
• Allen, Stan. "*Field Conditions*", in Points and Lines - Diagrams and Projects for the City. New York: Princeton Architectural Press 1999
• Allen Stan. "*Mapping the Unmappable - On Notation*", in Practice – Architecture, Technique and Representation. Routledge, London, 2003.
• Berman, Ila. "*Fluid Cartographies and Material Diagrams*", in New Orleans: Strategies for a City in Soft Land. Boston: Harvard University, 2005.
• Van Berkel, Ben + Bos, Caroline, "*Interactive Instruments in Operation: Diagrams*". in ANY 23 Diagram Work: Data Mechanics for a Topological Age, 1998.
• Vidler, Anthony. "*Diagrams of Diagrams*", in Representations No. 72 (Autumn 2000), 2000.
• Gausa, Manuel. *"Diagrams as Battlemap",* in Architectural and Program Diagrams 1, Miyoung Pyo, Seonwook Kim [editors], DOM Publishers, 2012

Note: The literature readings are an ongoing resource. Please see listings in assignments.

ANNEX// GOVERNING DETAILS

Arch Analysis Class Meetings

Lectures and class meetings will be held throughout the term. Be prepared to come to class in time at 9:00 am. Please be punctual and come prepared. Check your email on a regular basis specifically the day before seminar days for updates.

Arch Analysis Grading

The semester consists of three assignments, a mid review, final review, digital submission and class discussions. To successfully complete the class each assignment needs to be accomplished and presented in time. Progress, participation and collaboration will effect the grades through out the semester. The assignments will be graded as follow:

A1 [25%]
A2 [25%]
A3 [35%]
Participation and Development [15%]

ARCH ANALYSIS CLASS CULTURE

Maintain the Studio

Cooperate in maintaining the studio space. If you play audio material, use headphones.

Attend Lectures and Work in Studio

Attend all lectures. Work in studio on studio days. Be in full attendance in studio from 9:30-12 a.m. and 1- 5 p.m. on studio days. If you are planning to visit the library or conduct off site research, please talk to your instructor.

Complete all parts of the work; submit your work on time

All assigned parts of the work must be completed. Punctual completion is required. Grade penalties will be applied to late submissions and chronic lateness may result in disciplinary review including refusal of acceptance. Late submissions must be accompanied by formal transmittal indicating reason for lateness. For submissions administered with evening deadlines, penalties would be assessed at 5% up to midnight, and 5% next day and each day afterward. 'Days' begin at midnight each day, and include weekends and holidays.

Accommodation for illness; not for travel

If you need to apply for accommodation of lateness or absence due for illness, make a formal application by using 'Verification of Illness' [VIF] forms or counseling letters, filed with the Architecture Office. Student travel plans are not considered acceptable grounds for granting alternative reviews and submission times.

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences [e.g., plagiarism, cheating] or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Director. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline'. For typical penalties check Guidelines for the Assessment of Penalties. Note: "Plagiarism, which is the act of presenting the ideas, words or other intellectual property of another as one's own. The use of other people's work must be properly acknowledged and

referenced [...]. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offence under this policy."

References
www.uwaterloo.ca/academicintegrity/
www.adm.uwaterloo.ca/infosec/Policies/policy71.htm.
www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm.

Grievance
A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please contact the department's administrative assistant who may provide further assistance.

Appeals
A decision made or penalty imposed under Policy 70 [Student Petitions and Grievances] [other than a petition] or Policy 71 [Student Discipline] may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 [Student Appeals] www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Students with Disabilities
The Office for Persons with Disabilities [OPD], located in Needles Hall, Room 1132, collaborates with academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Faculty contact and office hours
Assoc. Prof. Dr. Mona El Khafif
melkhafif@uwaterloo.ca
Wednesdays 7:00 pm – 8:00 pm