NEW YORK CITY
COLLEGE OF TECHNOLOGY
THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

MAJOR CURRICULUM MODIFICATION PROPOSAL
for
YEARS ONE AND TWO

2016 09 30
Revision 1: October 31, 2016

Sanjive Vaidya
Chairperson

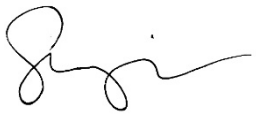
Prepared by: Professors Montgomery, Chin, Duddy, Mishara, Anzalone

Table of Contents

New York City College of Technology, CUNY

CURRICULUM MODIFICATION PROPOSAL FORM

This form is used for all curriculum modification proposals. See the Proposal Classification Chart for information about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

Title of Proposal	**Architectural Technology Major Curriculum Modification Proposal for Years One and Two**
Date	**Oct 31 2016**
Major or Minor	**Major**
Proposer's Name	**Jason Montgomery**
Department	**Architectural Technology**
Date of Departmental Meeting in which proposal was approved	**September 22, 2016 and September 27, 2016**
Department Chair Name	**Sanjive Vaidya**
Department Chair Signature and Date	 **2016 09 30**
Academic Dean Name	**Kevin Hom**
Academic Dean Signature and Date	 **2016 09 30**
Brief Description of Proposal (Describe the modifications contained within this proposal in a succinct summary. More detailed content will be provided in the proposal body.	**The modifications in this proposal are changes to the first two years of our current degree programs. The changes include one new course, elimination of three courses from the current AAS degree requirements, and changing credit hours for four courses, integrating content to allow the merging of four courses into two courses.**
Brief Rationale for Proposal (Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body).	**This proposal is a direct response to our department's pursuit of accreditation by the National Architectural Accreditation Board (NAAB) and anticipates a future application for a new degree program by aligning the first two years with the new five year curriculum under development in our department.**
Proposal History (Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list).	**This is the first revision of the proposal initially submitted on Sept 30, 2016. This revision responds to the comments and suggestions of the subcommittee of the Curriculum Committee.**

DESCRIPTION OF MAJOR MODIFICATIONS AND RATIONALE

Upon the completion of our 10 Year Review self study and following the recommendation of our Dean and external reviewer, the faculty of the Department of Architectural Technology have agreed to pursue accreditation through the National Architectural Accreditation Board for a Bachelor of Architecture. This new degree will be in addition to our current degree programs; we will continue to maintain the existing AAS and Bachelor of Technology degrees, with modifications so that all the degrees coordinate where necessary. Each degree serves our students' varied needs and each offers a different path into the field of architecture and its allied industries. This proposal is the result of our department's analysis of the changes to our existing curriculum that will enhance our ability to achieve accreditation.

The Department of Architectural Technology is proposing a restructuring of its curriculum of years one and two to bring them into alignment with National Architectural Accreditation Board (NAAB) requirements for an accredited Bachelor of Architecture (BARCH) degree, a new degree program that is in development for a subsequent submission. There are currently 59 institutions listed on the NAAB website[1] offering an accredited BARCH degree or are current BARCH candidate programs, including 8 in New York State. CUNY currently offers one accredited BARCH program at City College. The CUNY Chancellor, City Tech's President and Provost, and the Dean of the School of Technology and Design are all supportive of City Tech's Department of Architectural Technology pursuit of a BARCH accredited degree program. NAAB states each BARCH program must require a minimum of 150 semester credit hours, with at least 45 credits dedicated to General Studies, and 10 credits to Optional Studies. Our department is working towards a degree program that will require approximately 160 credits total, earned over a 5 year curriculum, a standard requirement that meets New York State requirements[2] and is similar to the requirements of City College (160 credits), Syracuse University (162 credits), SUNY Alfred State (157 credits), and NYIT (160 credits).

Our department offers the most accessible architectural education in the metro area, with competitive tuition and a large enrollment capacity. NYCCT's Department of Architectural Technology is known for its workplace-oriented curriculum, leading edge technologies and student-focused environment, providing opportunities for students to engage in real-world community service projects. The introduction of the accredited degree will offer our diverse students a stronger path to licensure, increased recognition in the profession, and strengthen their employment opportunities in architectural practice.

This curriculum proposal for years one and two will provide a stronger basis for all students in the department with its emphasis on Integrated Learning and its application of increased general education as well as scholarship of teaching and learning. This modification puts in place a structure that seeks to prepare as broadly as possible the number of students from our current enrollment that will be eligible for the new BARCH degree. Briefly stated, the changes will involve:

[1] http://www.naab.org/architecture-programs/school-search/

[2] New York State Office of the Professions recognizes a NAAB accredited degree as contributory to the Education Requirements for Licensure, http://www.op.nysed.gov/prof/arch/archlic.htm.

- Alignment of degree requirements with NAAB student performance criteria.
- Enhanced emphasis on foundational knowledge of the discipline and application of the scholarship of teaching and learning to the courses in the first year.
- Shifting introduction of technical content to a later point in the curriculum.
- Increased emphasis on the studio courses to facilitate integrated learning.

NAAB's primary tool for assessing programs seeking to achieve or maintain accreditation status is the Student Performance Criteria (SPC) described in the most recent Conditions for Accreditation[3] published by NAAB. The 2014 edition of this document states,

> "The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria below. The knowledge and skills defined here represent those required to prepare graduates for the path to internship, examination, and licensure and to engage in related fields. The program must provide student work as evidence that its graduates have satisfied each criterion."[4]

The SPC are broken down into four "realms" covering Critical Thinking and Representation, Building Practices, Technical Skills, and Knowledge, Integrated Architectural Solutions, and Professional Practice. For each criterion, NAAB specifies that the student work must demonstrate either "understanding" or "ability". As we seek to align our curriculum to these to ensure all graduates meet these standards, we must determine which courses will meet particular SPC. NAAB limits each SPC to be demonstrated in 2-3 courses maximum. This proposal reflects our most recent study of the distribution of the SPC across the AAS courses. While many SPC will be demonstrated by the upper level courses, the AAS courses must integrate the skills and knowledge required by the SPC as starting point for a scaffolded approach to teaching going through the steps of introduction followed by practice and reinforcement leading to mastery.

A number of the changes in this proposal are directly tied to the emphasis on General Education at City Tech and the initiatives that have supported research, training, integration, and practice of building students' foundational skills to support higher levels of learning as they advance through their degree programs. Using the city as laboratory and placed-based learning are critical components of the pedagogy of this enhanced AAS curriculum. Active learning is emphasized with more problem-based learning. Active learning through problem-based learning is facilitated by reallocation of credits and contact hours to increase lab time for some courses. This approach to the new curriculum has strong potential to increase retention.[5]

With the first year courses designed to build foundational knowledge and build General Education skills, some technical content has been shifted to later semesters. Technical content has historically been a central feature

[3] http://www.naab.org/accreditation/program-resources/current-conditions-and-procedures/
[4] http://www.naab.org/wp-content/uploads/01_Final-Approved-2014-NAAB-Conditions-for-Accreditation.pdf
[5] See below for research support for improving retention through active learning and problem-based learning pedagogy.

of our AAS degree when it was focused on training architectural technicians and CAD drafters.[6] This proposal seeks balance between this vocational legacy and the professional preparation at the core of the accredited BARCH degree. While not all students will be eligible for the BARCH degree, all students including the BARCH students will move through this AAS curriculum. These changes maintain and enhance the viability of the AAS degree as a stand-alone degree that offers our students a strong foundation in hard skills, soft skills, and knowledge of the discipline that will allow graduates to pursue employment or further education.

This proposal positions the first two years of the current degree programs to reflect important commonalities of accredited BARCH programs across the country while maintaining critical qualities of our program that are distinctive and distinguish our program from our peers. Studio is the core of BARCH programs across the country, as reflected in the credits and contact hours dedicated to studio courses. Changes in this proposal address our current inadequate studio credit allocation and contact hours. At the same time, important elements of our current curriculum will remain, including our "digital spine" and a slightly adjusted building technology sequence.

The BARCH will require a number of steps to implement, as this degree will be a new degree program for our department and the college. This curriculum modification is the first step towards the implementation of the BARCH degree. Our plan will have all students enter the AAS degree together, and then at a later point move into either the BTECH degree or the BARCH degree. A subsequent proposal will present changes to the BTECH degree and the years 3, 4, and 5 for the BARCH degree, along with the application for the New Degree Program.

The proposed changes to the AAS not only bring this degree into alignment with the new BARCH, they also provide improvements for the benefit of all AAS and BTECH students. The changes are as follows:

1. Combine ARCH 1110 Foundations I and ARCH 1191 Visual Studies I courses into one course, with the course content merged.
2. Combine ARCH 1210 Foundations II and ARCH 1291 Visual Studies II courses into one course, with the course content merged.
3. Increase the credit hours and contact hours of ARCH 2310 Architectural Design III and ARCH 2410 Architectural Design IV.
4. Shift the Building Technology Courses back one semester, eliminating Building Technology IV as a requirement for the AAS.
5. Introduce a new course, Introduction to Architecture, (ARCH 1101).
6. Modify ARCH 1121 History of Architectural Technology and ARCH 1250 Site Planning to change the name of the course, the course number, the course description, and the credit hours/contact hours.
7. Eliminate the requirements for ARCH 2370 Building Systems, and ARCH 2480 Structures I in the AAS degree.

[6] See AAS description in 2016 catalogue, page 197.

DETAILED RATIONAL for AAS CHANGES:

Changes #1,2:

Combining ARCH 1110 Foundations I and ARCH 1191 Visual Studies I, and ARCH 1210 Foundations II and ARCH 1291 Visual Studies II is a change that addresses a number of important issues. First, this change integrates traditional linked studio skills and knowledge into one course rather than separating them into distinct courses. Second, the merger brings these courses into a consistent allocation of credits and contact hours with the other AAS studio courses (Studio III and Studio IV). Third, this merger of the courses addresses scheduling challenges for the students and streamlines course content that has been linked through co-requisite requirements. Currently, Foundations and Visual Studies sections are taught as co-requisites where students are required to enroll in specific linked sections of the two courses, meaning the same group of students must be enrolled in the same two sections of Foundations and Visual Studies. This is essential to the courses because the content of Visual Studies has been developed to directly relate and support the projects being generated in Foundations. Intense and rigorous coordination is necessary. Typically, a digital skill/tool is taught in Visual Studies course and then applied and reinforced in Foundations.

The intention behind combining the two courses is to create a more fluid and synergistic interaction between the course content. Originally it was necessary to separate the two in order to refine the content and tools being introduced in the digital modules allowing for the evolution of an outline of a specific sequence of exercises that support the Foundation studio. Now that the courses have been launched and the instructors have been introduced and are familiar with the dual content and intention behind the courses it is possible to merge them into a single course which will allow better reinforcement of learning objectives and skills. Additionally, merging the courses will prevent students from accidentally enrolling in the wrong linked section, which has been an ongoing challenge for the department.

The credit and meeting hours of the merged course will match the existing total credit and contact hours. The merged course will be 5 credits, with 1 classroom/lecture hour and 8 lab hours totaling 9 contact hours.

Change #3:

Architectural studio pedagogy is problem-based learning centered on guided practice, action and reflection.[7] Twenty-first century studio education is heavily based on digital technologies, but digital technology can have negative impact in the design studio, especially for the novice designer.[8] The critical teaching activity of architectural studio pedagogy is the conversation and examination that occur between the faculty member and

[7] Schön, Donald A. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. San Francisco: Jossey-Bass, 1987. Print.

[8] Al-Qawasmi, Jamal. "Digital Media in Architectural Design Education: Reflections on the E-studio Pedagogy." *Art, Design & Communication in Higher Education Art, Design & Communication in Higher E* 4.3 (2005): 205-22. Web. 28 Sept. 2016.

the student. This activity is equally important in a group setting (the pin-up) as it is in a one-on-one basis (the desk crit.) As put by Helena Webster, "The design studio as 'laboratory'[9] remains at the core of the architectural curriculum, the integrated design project continues as the principal pedagogic vehicle and tutoring or 'coaching' still represents the main teacher/student interface."[10]

NAAB programs across the country concentrate the most significant allocation of credits and contact hours to the studio courses, reflecting both the tradition of architectural education but also the enduring pedagogy of problem-based learning. A study of 11 of the 55 NAAB accredited programs in the US (8 of which are public institutions) finds that the average credit hour allocation for studio courses is 5.7. Of these programs, 8 clearly list their studio contact hours, for which the average is 12.1875 hours. The simplest metric to evaluate the adequacy of the contact hours is the measurement of total contact hours (in minutes)/student/week. The number of students per studio section in the studied programs is not clear based on publicly available information, making this calculation for them difficult. At City Tech, our current AAS studio courses ARCH 2310 and ARCH 2410 have 18 student class size and 7 contact hours. (Each contact hour is 50 minutes actual time.) Therefore, we are currently allocating 19.4 minutes per week for each student in the studio, or 9.7 per class as the studio meets twice each week. This time is diminished if the faculty member spends time in discussion with the full class each week. 9.7 minutes or less per class period is not adequate for significant examination of student progress, diagnosing strengths and weaknesses, and providing directed and detailed feedback. With the general trend that most BARCH programs have smaller class sizes and longer contact hours, City Tech architecture students are currently at a disadvantage in this substandard allocation of contact hours in comparison to their peers around the country.

Our third party reviewer noted that our studio education requires better balance of architectural theory, and NAAB additionally requires the studio courses to demonstrate integration of a wide range of architectural issues (structure, program, life safety, site conditions, environmental stewardship, accessibility…)[11] This proposal addresses the above conditions and challenges by increasing the credits and contact hours for the studio courses ARCH 2310 and ARCH 2410 while reducing the number of students in each section to ensure a higher allocation of time for one-on-one teaching.

Change #4:

Students enter our program with a varying degree of preparedness for college, with varied study skills, prior knowledge of the discipline, level of intellectual engagement. The scholarship of teaching and learning provides a basis for strategies to address these challenges for our students. The curriculum outlined in this proposal is designed to provide a scaffolded approach that can build foundational skills that can support deeper learning as the students progress in our curriculum. The shift of our Building Technology Sequence

[9] Schön, Donald A. *The Design Studio: An Exploration of Its Traditions and Potentials*. London: RIBA Publications for RIBA Building Industry Trust, 1985. Print.
[10] Webster, Helena. "Facilitating Critically Reflective Learning: Excavating the Role of the Design Tutor in Architectural Education." *Art, Design & Communication in Higher Education Art, Design & Communication in Higher E* 2.3 (2004): 101-11. Web. 28 Sept. 2016.
[11] http://www.naab.org/wp-content/uploads/01_Final-Approved-2014-NAAB-Conditions-for-Accreditation.pdf

back one semester removes technical courses from the first semester and allows for a more general introductory course that is specifically designed to bridge the gap of knowledge of the discipline and the profession for incoming students. This introductory course will help provide a context and basis for the introduction of technical content starting in the second semester. This shift results in Building Technology IV being removed from the requirements for the AAS degree. Building Technology IV will continue to be offered and will be available for all current students to complete their AAS degree requirements. It is being considered for inclusion in the degree requirements for the Bachelor of Technology in our subsequent proposal.

Change #5:

As mentioned in the description of Change #4, this proposal provides a scaffolded approach to the first year curriculum. The new course in the first semester, Introduction to Architecture, will address fundamental needs of our incoming students. First, it will provide first hand experience of architecture by using New York City as a laboratory for learning. This place-based learning process is critical to address many students' lack of prior knowledge of the discipline, as well as their skill of looking and seeing, and careful observation of the built environment. It will build the students' foundational knowledge of the city and its key structures so they can be used as a reference and context for further exploration as they progress in the curriculum. The fieldwork will include sketchbook documentation that will help develop the students drawing skills. In addition to the place-based component, this course will introduce the students to reading, analyzing, and making architectural drawings. Finally, it will provide an overview of the profession and our degree programs to help students navigate their path toward a degree well suited to their goals.

Change #6:

Two courses, ARCH 1121 History of Architectural Technology, and ARCH 1250 Site Planning, will have their credit hours increased from 2 credits to 3 credits to allow each course to address a broader range of content and pedagogy while also continuing the scaffolded approach to learning in our curriculum. ARCH 1121 will shift from first semester to second semester, and will incorporate a more inclusive and diverse treatment of architectural history, important both to engage our diverse student population but also to provide them with a worldly view of culture and architecture's relationship to culture. ARCH 1250 Site Planning will shift to the third semester and integrate additional content relating to sustainability. This course will also integrate problem-based learning pedagogy with the increase of lab time.

Change #7:

As part of the shift of technology courses later in the curriculum, both the ARCH 2480 Structures I and ARCH 2370 Building Systems course are being removed from the AAS curriculum and will be integrated into the subsequent modifications of the Bachelor of Technology. In both cases, however, some content from these courses will be introduced to building technology and studio courses as part of the integrated studio.

Course by Course Description of Changes to Existing Curriculum*:

*Course names and numbers in list below are as existing.

Design Sequence

ARCH 1110 - Architectural Design I: Foundations (existing course; integration of additional content from ARCH 1191, increased lab/studio hours, increased credits.)

ARCH 1210 - Architectural Design II: Foundations (existing course; integration of additional content from ARCH 1291, increased lab/studio hours, increased credits.)

ARCH 2310 - Architectural Design III (existing course, course name and description adjustment; lecture hours remain, lab/studio hours increased, credits increased.)

ARCH 2410 - Architectural Design IV (existing course, course name and description adjustment; lecture hours remain, lab/studio hours increased, credits increased.)

Building Technology Sequence

ARCH 1130 - Building Technology I (existing course shifted in sequence, course number changes, course description change, adjusted course outline, lecture hours remain, lab/studio hours increased, credits increased.)

ARCH 1230 - Building Technology II (existing course shifted in sequence, course number changes, course description change.)

ARCH 2330 - Building Technology III (existing course shifted in sequence, course number changes, course description changes.)

ARCH 2430 - Building Technology IV (course eliminated from AAS requirements.)

Structures

ARCH 2480 - Principles of Stability in Structures (course eliminated from AAS requirements, content partially integrated into ARCH 2410.)

Sustainability

ARCH 1250 - Site Planning (existing course; shifted in sequence, course number and name change, course description change, lecture hours unchanged, lab/studio hours increased, credits increased.)

ARCH 2370 - Environmental Systems for Architects (course eliminated from AAS requirements, content partially integrated into ARCH 2410.)

History

ARCH 1121 - History of Architectural Technology (existing course rewritten; change of course name and number, increase in lecture hours, increased credits.)

The following courses remain unchanged:

History

ARCH 2321 - History of Architecture 1900 to the Present[12]

Capstone Electives

ARCH 3550 - Building Performance Workshop

ARCH 3590 - Parametric Computation, Materials, and Fabrication

ARCH 3662 - Government Regulations and Approvals

The following courses will be eliminated:

Visual Studies

ARCH 1191 - Visual Studies I: course eliminated and integrated into ARCH 1110.

ARCH 1291 - Visual Studies II: course eliminated and integrated into ARCH 1210.

[12] Met as Gen Ed as existing

Course by Course Proposed Curriculum:

Introductory Course

ARCH 1101 – Introduction to Architecture

Design Sequence

ARCH 1110 - Architectural Design I: Foundations
ARCH 1210 - Architectural Design II: Foundations
ARCH 2310 - Studio III
ARCH 2410 - Studio IV

Building Technology Sequence

ARCH 1205 - Building Technology I
ARCH 2305 - Building Technology II
ARCH 2405 - Building Technology III

Sustainability

ARCH 2350 – Site Planning and Sustainabilty

Electives

Capstone Electives:
ARCH 3550 - Building Performance Workshop
ARCH 3590 - Parametric Computation, Materials, and Fabrication
ARCH 3662 - Government Regulations and Approvals

History

ARCH 1221 - History of World Architecture to 1900
ARCH 2321 - History of Architecture 1900 to the Present [13]

[13] Met as Gen Ed as existing

CURRICULUM ANALYSIS:

The changes to the AAS curriculum have been analyzed for their impact on total credits per semester, total contact hours per semester, change in student capacity and projected number of sections required, and space implications.

Total Credits per Semester:

The overall credit total of 64 credits for the AAS degree remains unchanged, with 44 credits in the discipline and 20-21 in the required core.

SEMESTER	EXISTING CURRICULUM	PROPOSED CURRICULUM
1	15	16
2	16	16
3	17	17
4	16	15
Totals:	64	64

Total Contact Hours for Architectural Courses per Semester:

The overall contact hours for students to complete the architectural courses in the AAS degree will increase by 5 hours, a 6.8% increase.

SEMESTER	EXISTING CURRICULUM	PROPOSED CURRICULUM
1	14	16
2	19	19
3	20	22
4	20	21
Total:	73	78

Total Courses per Semester:

The proposed curriculum reduces the number of overall courses required for the AAS degree, streamlining the degree, focusing the student work during class time and at home, and allowing increased integration of skills and knowledge in the discipline.

SEMESTER	EXISTING CURRICULUM	PROPOSED CURRICULUM
1	5	4
2	6	4
3	5	5
4	5	4
Total:	21	17

Changes in Student Capacity and Projected Sections:

The studio courses require a set allocation of contact minutes per student to ensure adequate one-on-one instruction each week.

Capacity Limits and Instruction Time / Student:

Course	Existing Capacity	Proposed Capacity	Minutes/Student
ARCH 1110 Architectural Design I	22[14]	18	25
ARCH 1210 Architectural Design II	18	18	25
ARCH 2310 Studio III	18	15	30
ARCH 2410 Studio IV	18	15	30

Capacity Limits Impact on # of Sections:

Course	Current Sections Fall 2016	Existing Student Enrollment Fall 2016	Sections Projected Fall 2017
ARCH 1110 Architectural Design I	8[15]	166	10 (9.22)
ARCH 1210 Architectural Design II	3	54	3 (3)
ARCH 2310 Studio III	5	90	6 (6)
ARCH 2410 Studio IV	3	52	4 (3.47)

Classroom Space Analysis:

The department will require additional space to implement the proposed curriculum.

ROOM TYPE	EXISTING	REQUIRED
Hybrid Studio	4	6
Computer Lab	3	4
General Classroom	4-5	4-5

As shown above, the department will require additional space to run the proposed curriculum. The Dean of Technology and Design has assured the department that the college will be able to allocate the necessary space for a lab and studios as part of the reallocation facilitated by the construction of the new college building on Jay Street.

[14] This capacity was previously set at 18, but increased by the Registrar to its current unsustainable number.

[15] Not including City Poly section.

Number of Sections run for AAS:

The department will require fewer total courses and sections of courses to implement this proposal.

AAS	EXISTING (2016/2017)	PROJECTED[16]
Fall Sections	72	63
Spring Sections	61	48
Annual Total	133	111
Percentage Change		-17%

This proposal will have an impact on the cost of running the AAS degree. As the tables above show, there will an increase of 5 contact hours to earn an AAS degree. But balancing this increase, the projected number of total sections of AAS architecture courses offered each year is reduced by 17%. In addition, the new scaffolded curriculum based around increased emphasis on active learning presents an opportunity to increase retention.[17] This proposal's cost implications, balanced as much as possible with the more efficient, consolidated course structure, are seen by the department as a direct investment that benefits our students.

[16] Based on changed student capacity for ARCH 1110, ARCH 2310, ARCH 2410 as well as shift of BTECH courses, resulting in fewer sections based on existing section count for BTECH courses each semester, resulting from attrition. This projection is based on same attrition/retention as current conditions.

[17] A Google scholar search for "Active Learning and Retention Rates" returns numerous articles documenting increased retention and graduation rates for courses applying active learning strategies compared to courses applying traditional lecture based strategies. Examples are: Schmidt, Henk G., Janke Cohen-Schotanus, and Lidia R. Arends. "Impact of problem-based, active learning on graduation rates for 10 generations of Dutch medical students." *Medical Education* 43.3 (2009): 211-218.
Freeman, Scott, et al. "Active learning increases student performance in science, engineering, and mathematics." *Proceedings of the National Academy of Sciences* 111.23 (2014): 8410-8415.

Table 1: PROPOSED CURRICULUM

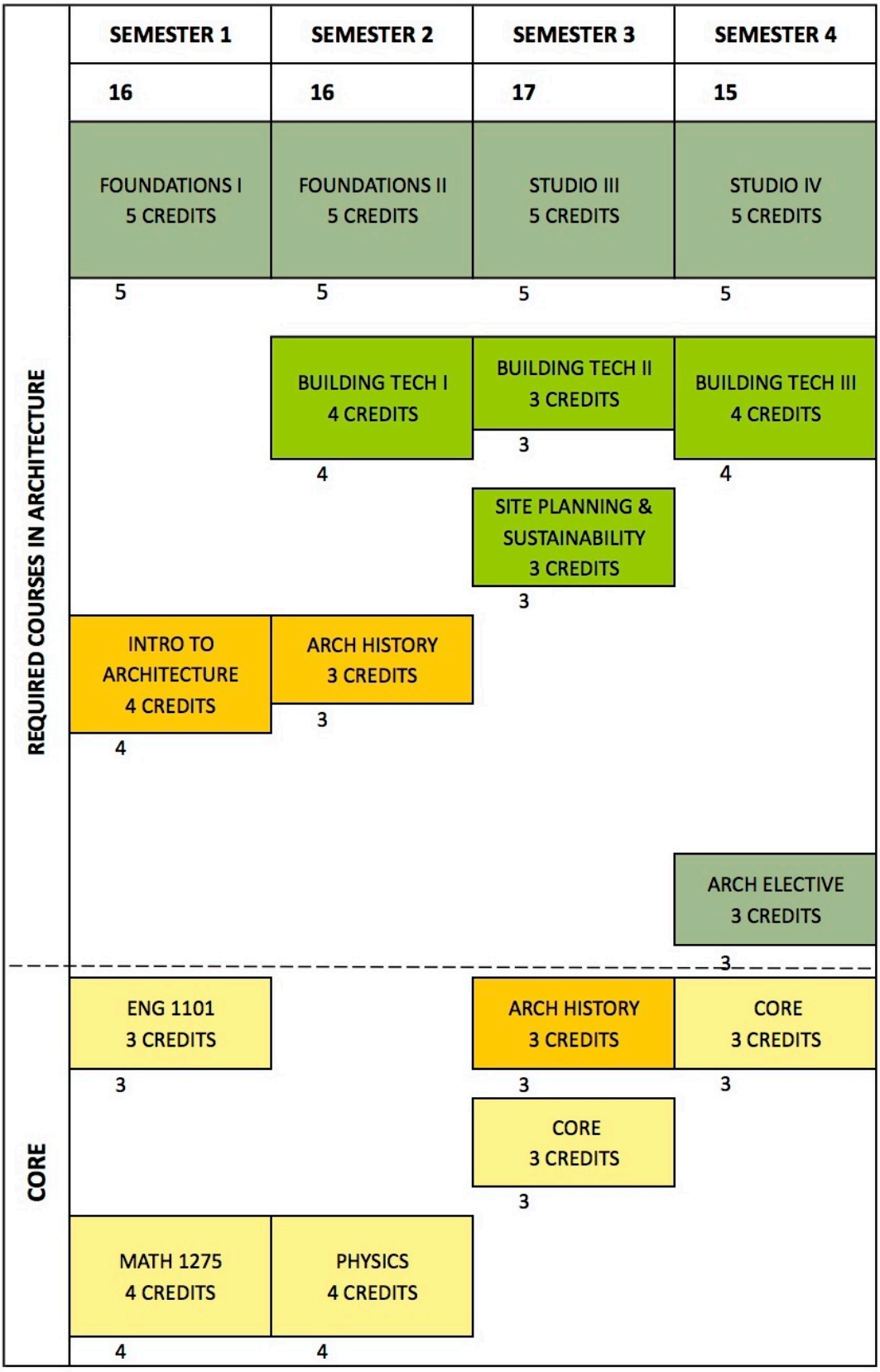


Table 2: Comparison of Existing and Proposed Courses

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
	ARCH 1101 **INTRODUCTION TO ARCHITECTURE** 1 cl hr, 6 lab/studio hrs, 4 credits **Course Description:** Introduction to architecture achieved through a visual literacy of New York City's built environment. Using the city as a living laboratory, students explore concepts of design, composition, and construction by sketching and writing about their direct experience of buildings. Accompanying lectures focus on freehand drawing techniques, concepts of composition, writing about buildings and their construction, and reading architectural drawings. Students develop graphic skills and the basic foundation to talk, write, and graphically express architecture and its construction. **Prerequisites:** none	**New Required Course**	**This course provides scaffolded introduction to degree programs through place-based learning and drawing and analysis.**

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 1110 **ARCHITECTURAL DESIGN I: FOUNDATIONS** 6 lab/studio hrs, 3 credits **Course Description:** The first course in the one-year foundation sequence, which increases the student's ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students will use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems. **Prerequisites:** none **Co-requisites:** ARCH 1191	**ARCH 1110** **ARCHITECTURAL DESIGN I: FOUNDATIONS and VISUAL STUDIES** 1 cl hr, 8 lab/studio hrs, 5 credits **Course Description:** A first-year foundational course that increases students' ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems. **Prerequisites:** none **Pre- or corequisites:** ARCH 1101	**Modified Course incorporates material from linked co-requisite course.** **Course Name Change** **Credits/Hours change** **Course outline change** **Changed pre- or corequisite**	**Provides for improved integration of design and visualization skills.** **Resolves significant scheduling and registration challenges.** **Reflects course integration and also provides support for course by providing scaffolded building of skills and knowledge.**
ARCH 1191 **VISUAL STUDIES I** 1 cl hrs, 2 lab/studio hrs, 2 credits **Course Description:** Visual Studies I is taken in tandem with ARCH 1110: Architectural Design I: Foundations to introduce the language of architectural representation and visualization, providing students with the techniques and skills to perceive visual cues, make aesthetic evaluations, translate information into graphic representation, create visual design, and formulate and render concepts in two or three dimensions. This course introduces basic skills for the manipulation of freehand and digital images, models, and data, and includes an introduction to computer systems, file management, word processing and spreadsheets, scanning and image editing. **Prerequisites:** None **Co-requisites:** ARCH 1110			

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 1121 **HISTORY OF ARCHITECTURAL TECHNOLOGY** 2 cl hrs, 2 credits **Course Description:** The study of architectural technology from prehistoric times to the present stressing the development of structural systems and the exploration of materials. This course will explore the interaction of building design and historic socio-economic determinants. **Prerequisites:** CUNY proficiency in Reading and Writing; or CUNY proficiency in Reading with co requisite of ENG 092W if part of a learning community; or for high school students enrolled through collaborative programs or City Poly High School who have not yet taken the SAT or completed Regents requirements, a PSAT score of 48 or higher in Verbal and/or Writing or successful completion of six units of high school English with an average of 80 or above and a high school recommendation.	**ARCH 1221** **HISTORY OF WORLD ARCHITECTURE TO 1900** 3 cl hrs, 3 credits **Course Description:** An historical survey of architecture from early civilizations to the start of the Industrial Revolution. Architecture is examined as an expression of the culture and life of a society. Class sessions study architecture from around the world within its social, temporal, and spatial contexts. While the history of Western architecture is covered from ancient Egypt to the Enlightenment, a special focus is directed to the architectures of the Far East, South Asia, Africa, pre-Columbian Latin America, the Islamic World, and elsewhere to provide a comprehensive overview of the richness and diversity of architecture as a cultural artifact. **Prerequisites:** none **Pre- or corequisites:** ENG 1101	**Course number change** **Course name change** **Course Description change** **Credits/Hours change** **Course outline change** **Changed prerequisite** **Change of Pre- or corequisities**	**Credit increase allows for increased course content and depth of investigation.** **Content change reflects NAAB requirements for global culture and cultural diversity.** **Provides support for course by providing scaffolded building of skills and knowledge.**
ARCH 1130 **BUILDING TECHNOLOGY I** 1 cl hrs, 4 lab/studio hrs, 3 credits **Course Description:** This course presents an introduction to basic materials of construction and the fundamental principles of architectural hand drafting and system analysis. The coursework includes surveying existing conditions, development of drawings of plans, elevations, sections, and basic details from foundation to roof as well as the study of material properties and applications with an emphasis on wood and masonry and shallow foundation systems. **Prerequisites:** CUNY proficiency in Reading and Writing; or CUNY proficiency in Reading with co requisite of ENG 092W if part of a learning community; or for high school students enrolled through collaborative programs or City Poly High School who have not yet taken the SAT or completed Regents requirements, a PSAT score of 48 or higher in Verbal and/or Writing or successful completion of six units of high school English with an average of 80 or above and a high school recommendation.	**ARCH 1205** **BUILDING TECHNOLOGY I** 1 cl hrs, 6 lab/studio hrs, 4 credits **Course Description:** Introduction to materials of construction and their properties. ARCH 1205 continues the development of architectural drawing, sketching, and drawing analysis skills introduced in ARCH 1101. **Prerequisites:** ARCH 1101; CUNY proficiency in Reading and Writing; or CUNY proficiency in Reading with co requisite of ENG 092W if part of a learning community; or for high school students enrolled through collaborative programs or City Poly High School who have not yet taken the SAT or completed Regents requirements, a PSAT score of 48 or higher in Verbal and/or Writing or successful completion of six units of high school English with an average of 80 or above and a high school recommendation.	**Course number change** **Credits/Hours change** **Course Description change** **Course Outline change** **Changed prerequisite**	**Course number change reflects new position within AAS curriculum** **Increased credit hour and contact hours facilitate increased time per student as well as additional content.** **Change in description and outline reflect adjustments to course content.** **Changed prerequisite to reflect addition of ARCH 1101 prior to this course.**

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 1210 **ARCHITECTURAL DESIGN II: FOUNDATIONS** 6 lab/studio hrs, 3 credits **Course Description:** The second course in the one year foundation sequence, which increases the student's ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students will use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems. **Prerequisites:** ARCH 1110 and ARCH 1191 both with a grade of C or higher **Co-requisites:** ARCH 1291	**ARCH 1210** **ARCHITECTURAL DESIGN II: FOUNDATIONS and VISUAL STUDIES** 1 cl hr, 8 lab/studio hrs, 5 credits **Course Description:** A first-year foundational course that increases students' ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems. **Prerequisites:** ARCH 1110 with a grade of C or higher. **Co-requisites:** none	**Modified Course incorporates material from linked co-requisite course.** **Course Name Change** **Credits/Hours change** **Course outline change** **Changed prerequisite** **Elimination of co-requisite**	**Provides for improved integration of design and visualization skills.** **Resolves significant scheduling and registration challenges.** **Reflects course integration.**
ARCH 1291 **VISUAL STUDIES II** 1 cl hrs, 2 lab/studio hrs, 2 credits **Course Description:** Visual Studies II builds on the knowledge of architectural representation and visualization obtained in ARCH 1111 and ARCH 1191 This course is taken in tandem with ARCH 1211 (Architectural Design II: Foundations), and focuses particularly on: precise crafting of physical and analogue models and architectural presentations, analogue and digital rendering techniques, and representation of geospatial information. The course provides the tools for students in their design work by strengthening their skills visually, verbally, and graphically so they may demonstrate their fluency in and understanding of key design vocabulary, concepts, and visual techniques. **Prerequisites:** ARCH 1110 and ARCH 1191 both with a grade of C or higher **Co-requisites:** ARCH 1210			

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 1230 **BUILDING TECHNOLOGY II** 1 cl hrs, 4 lab/studio hrs, 3 credits **Course Description:** This course will study the basic materials of construction as well as the theory and practice of building technology. The course will include investigation of the assembly of building components and methods of construction while developing proficiency in both analog and digital drawing building information modeling (BIM) techniques, and professionally presented construction drawing page composition. **Prerequisites:** ARCH 1130 with a grade of C or higher	**ARCH 2305** **BUILDING TECHNOLOGY II** 1 cl hrs, 4 lab/studio hrs, 3 credits **Course Description:** A continuation of the study of the materials of construction as well as the theory and practice of building technology. Students investigate the assembly of building components and methods of construction while developing proficiency in both analog and digital drawing and building modeling techniques. **Prerequisites:** ARCH 1205 with a grade of C or higher **Pre- or corequisites:** MAT 1275 or higher	**Course number change** **Course Description change** **Course outline change** **Changed prerequisite**	**Course number change reflects new position within AAS curriculum.** **Course description change reflects current course content to align course with studio content for integrated teaching as per NAAB requirements.** **Changed prerequisites reflect changes in this proposal and relocated MAT pre and corequisite to ARCH 1205.**
ARCH 1250 **SITE PLANNING** 1 cl hrs, 2 lab/studio hrs, 2 credits **Course Description:** The application of the fundamental techniques of site planning principals and the use of topographic maps and models. This course will explore the importance of site development as it relates to architecture and sustainable site development. Graphic and model presentations skills are required. **Prerequisites:** ARCH 1130 with a grade of C or higher **Pre- or corequisites:** MAT 1275 or higher, ARCH 1210 with a grade of C or higher if it is a prerequisite.	**ARCH 2350** **SITE PLANNING & SUSTAINABLITY** 1 cl hrs, 4 lab/studio hrs, 3 credits **Course Description:** Introduction to the fundamentals of site planning principles with a strong foundation in ecological design and sustainable site development. This course connects the built and natural worlds, provides practice in topographical and GIS maps and will develop graphic and model presentation skills. **Prerequisites:** ARCH 1205 with a grade of C or higher. **Pre- or corequisites:** MAT 1275 or higher, ARCH 1210 with a grade of C or higher if it is a prerequisite.	**Course number change** **Course name change** **Credits/Hours change** **Changed pre-requisite**	**Course number change reflects new position within AAS curriculum** **Change of name reflects full content of course** **Increased credit hour and contact hours facilitate problem-based learning approach.** **Changed prerequisite and corequisite reflect changes in this proposal and relocated MAT prerequisite to ARCH 1205.**

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 2310 **ARCHITECTURAL DESIGN III** 1 cl hr, 6 lab hrs, 4 credits **Course Description:** This course is an exploration of abstract architectural design theory in the expression of three-dimensional space. The creation of comprehensive architectural design projects is developed following a building program and incorporating elements of site, enclosure, structure, material and technology. Design concepts and vocabulary are introduced and strengthened through design projects. A juried presentation will take place at the completion of each project. **Prerequisites:** ARCH 1210 and ARCH 1291 both with a grade of C or higher **Pre- or co-requisite:** ARCH 1250	**ARCH 2310 STUDIO III** 1 cl hr, 8 lab hrs , 5 credits **Course Description:** An exploration of abstract architectural design theory in the expression of three-dimensional space. Students design a small wood-frame building incorporating a building program and elements of site, enclosure, structure, materials, and technology. The structural design of their projects are analyzed and developed in coordination with the building technology sequence. Design concepts and vocabulary are introduced and strengthened through design projects. **Prerequisites:** ARCH 1210 and ARCH 1205 both with a grade of C or higher **Pre- or co-requisite:** ARCH 2350	**Course name change** **Change in Hours/Credits** **Course Description change** **Course outline change** **Changed prerequisite and co-requisite.**	**Changes facilitate integrated learning in studio courses necessitated by NAAB requirements for Integrated Architectural Solutions.** **Changed prerequisite and corequisite reflect changes in this proposal and increased interconnection between the studio sequence and the building technology sequence.**
ARCH 2410 **ARCHITECTURAL DESIGN IV** 1 cl hrs, 6 lab hrs, 4 credits **Course Description:** This studio is an introduction to architectural design emphasizing concept development throughout the design process to a final spatial experience. Research and analysis, program development, flow diagrams and massing studies will be used to further develop the student's concepts into their final projects. A juried presentation will take place at the completion of each project. **Prerequisites:** ARCH 2310 with a grade of C or higher **Pre- or co-requisites:** ARCH 2321	**ARCH 2410 STUDIO IV** 1 cl hrs, 8 lab hrs, 5 credits **Course Description:** A continuation of Studio III emphasizing concept development throughout the design process to a final spatial experience. Research and analysis, program development, flow diagrams and massing studies are used to further develop the student's concepts into their final projects. A juried presentation takes place at the completion of each project. Students design a medium size steel frame building that integrates program, form and structure. The structural design of their projects are analyzed and developed in coordination with the building technology sequence. **Prerequisites:** ARCH 2310 with a grade of C or higher; ARCH 2350; **Pre- or co-requisites:** ARCH 2305 with a grade of C or higher if a prerequisite, ARCH 2321	**Course name change** **Change in Hours/Credits** **Course Description change** **Course outline change** **Changed prerequisite and corequisite.**	**Changes facilitate integrated learning in studio courses necessitated by NAAB requirements for Integrated Architectural Solutions.** **Changed prerequisite and corequisite reflect changes in this proposal and increased interconnection between the studio sequence and the building technology sequence.**

Department of Architectural Technology		**PROPOSED MAJOR COURSE CHANGES**	
Original Course Description	Proposed Course Description	Major change	Rationale
ARCH 2330 **BUILDING TECHNOLOGY III** 1 cl hrs, 6 lab/studio hrs, 4 credits **Course Description:** This course studies the development of building systems as they occur during the design development phase of architecture. Using case study research methods, students analyze factors, such as building assemblies and systems, codes and government regulations, human ergonomics, and sustainability, that affect building construction and use. Their solutions to these issues are integrated into their final building design solutions. The student creates a series of reports and a set of construction drawings using both analog methods (hand sketching and drawing) and digital tools including traditional CAD software and Building Information Modeling techniques. **Prerequisites:** ARCH 1230 with a grade of C or higher	**ARCH 2405** **BUILDING TECHNOLOGY III** 1 cl hrs, 6 lab/studio hrs, 4 credits **Course Description:** The study of the development of the building systems as they occur during the design development phase of architecture. Working from an existing design solution students transform the design into a workable building solution documented and detailed in a preliminary set of construction documents. Using case study research methods, students analyze factors, such as zoning, building assemblies and systems, codes and government regulations, human ergonomics, and sustainability, which affect building construction and use. Their solutions to these issues are integrated into their final building design solutions. Students create a series of reports and a set of construction drawings using both analog methods (hand sketching and drawing) and digital tools including traditional CAD software and Building Information Modeling techniques in coordination with the building technology sequence. **Prerequisites:** ARCH 2305 with a grade of C or higher; MAT 1275	**Course number change** **Changed prerequisite** **Course Description change**	**Course number change reflects new position within AAS curriculum.** **Changed prerequisite reflects changes in this proposal.** **Course description change reflects current course content.**

New Course Proposal Form and Course Outline

New York City College of Technology, CUNY

NEW COURSE PROPOSAL FORM

This form is used for all new course proposals. Attach this to the Curriculum Modification Proposal Form and submit as one package as per instructions. Use one New Course Proposal Form for each new course.

Course Title	INTRODUCTION TO ARCHITECTURE
Proposal Date	SEPT. 30, 2016
Proposer's Name	MICHAEL DUDDY
Course Number	ARCH 1101
Course Credits, Hours	4 CREDITS, 1 cl hour, 6 lab hours
Course Pre / Co-Requisites	CUNY proficiency in Reading and Writing; or CUNY proficiency in Reading with co requisite of ENG 092W if part of a learning community; or for high school students enrolled through collaborative programs or City Poly High School who have not yet taken the SAT or completed Regents requirements, a PSAT score of 48 or higher in Verbal and/or Writing or successful completion of six units of high school English with an average of 80 or above and a high school recommendation.
Catalog Course Description	Introduction to architecture achieved through a visual literacy of New York City's built environment. Using the city as a living laboratory, students explore concepts of design, composition, and construction by sketching and writing about their direct experience of buildings. Accompanying lectures focus on freehand drawing techniques, concepts of composition, writing about buildings and their construction, and reading architectural drawings. Students develop graphic skills and the basic foundation to talk, write, and graphically express architecture and its construction.
Brief Rationale Provide a concise summary of why this course is important to the department, school or college.	This course provides scaffolded introduction to degree programs through place-based learning and drawing and analysis.
TIPPS – Course Equivalencies Provide information about equivalent courses within CUNY, if any.	None
Intent to Submit as Common Core If this course is intended to fulfill one of the requirements in the common core, then indicate which area.	N/A
For Interdisciplinary Courses: - Date submitted to ID Committee for review - Date ID recommendation received	N/A N/A

- Will all sections be offered as ID? Y/N	N/A
Intent to Submit as a Writing Intensive Course	N/A

COURSE OUTINE: See page 31 below.

For Library Resources and Information Literacy Form: See pages 101-103 below.

COURSE NEED ASSESSMENT:

NEED FOR COURSE: This new course provides a critical scaffolded approach to the first year curriculum. The new course in the first semester, Introduction to Architecture, will address fundamental needs of all of our departments' incoming students. First, it will provide first hand experience of architecture by using New York City as a laboratory for learning. This place-based learning process is critical to address many students' lack of prior knowledge of the discipline, as well as their skill of looking and seeing, and careful observation of the built environment. It will build the students' foundational knowledge of the city and its key structures so they can be used as a reference and context for further exploration as they progress in the curriculum. The fieldwork will include sketchbook documentation that will help develop the students drawing skills. In addition to the place-based component, this course will introduce the students to reading, analyzing, and making architectural drawings. Finally, it will provide an overview of the profession and our degree programs to help students navigate their path toward a degree well suited to their goals.

This course is anticipating requirements of a new degree program that will seek accreditation by the National Architectural Accreditation Board (NAAB.) This course will provide two of the required NAAB Student Performance Criteria for accreditation: *Investigative Skills* and *History and Culture.* These requirements are outlined in NAAB's document Conditions for Accreditation, 2014.[18]

[18] http://www.naab.org/wp-content/uploads/01_Final-Approved-2014-NAAB-Conditions-for-Accreditation.pdf

TARGETED STUDENTS: All incoming First Year Students for all degree programs in the Department of Architectural Technology. We anticipate providing 8-9 sections (24 students per section) of this course each fall semester, and a smaller number of sections each spring semester based on our Fall 2016 enrollment of 166 incoming first year students.

PHYSICAL REQUIREMENTS: This course will need a room equivalent to our current V305 hand drawing studio.

RELATIONSHIP TO OTHER COURSES: This course will provide a foundation for all courses in the first two years of our programs. It will provide a scaffolded approach to understanding the discipline, using observation as a tool for understanding, analyzing and making architectural drawings. It feeds into the History sequence, the Building Technology sequence, and supports the Design Foundations sequence.

FACULTY: The Department has full time faculty and part-time faculty with the required expertise to implement this course.

COURSE DESIGN:

COURSE CONTEXT: This course will be a required course for the AAS degree.

COURSE STRUCTURE:
This course is developed as three modules:

1. Place based module centered on “Experiencing Architecture”
2. A studio based component on “Analyzing Architecture”
3. A studio based component on “Drawing Architecture”

Experiencing Architecture: This course is designed applying the pedagogy of Place-Based Learning. It will provide first hand experience of architecture by using New York City as a laboratory for learning. This place-based learning process is critical to address many students' lack of prior knowledge of the discipline, as well as their skill of looking and seeing, and careful observation of the built environment. It will build the students' foundational knowledge of the city and its key structures so they can be used as a reference and context for further exploration as they progress in the curriculum. The fieldwork will include sketchbook documentation that will help develop the student's observational drawing skills.

Analyzing Architecture: In addition to the place-based component, this course will introduce the students to reading and analyzing architectural drawings. This portion of the course will be studio based, where students will study existing architectural drawings through visual analysis overlays, studying geometry, solid and void, axial relationships, symmetry…

Drawing Architecture: In this same studio environment, students will focus on basic orthographic projection, including plan, section, and elevation drawing.

Throughout the course, the instructor will provide an overview of the profession and our degree programs to help students navigate their path toward a degree well suited to their goals.

PROGRAM LEARING OUTCOMES:

This course supports the AAS and BTECH program learning outcomes as it provides a foundational introduction to the skills and knowledge fundamental to the discipline. It will provide a clear platform to help students focus on their alignment of goals and ambitions and to test them against the demands of pursing a career either in architectural practice or in an allied field.

ONLINE:

This course is not designed to be partially or fully online.

NEW COURSE PROPOSAL CHECK LIST

Use this checklist to ensure that all required documentation has been included. You may wish to use this checklist as a table of contents within the new course proposal.

Completed NEW COURSE PROPOSAL FORM	
• Title, Number, Credits, Hours, Catalog course description	X
• Brief Rationale	X
• TIPPS – Course Equivalencies	X
Completed Library Resources and Information Literacy Form	X
Course Outline Include within the outline the following.	X
Hours and Credits for Lecture and Labs If hours exceed mandated Carnegie Hours, then rationale for this	X
Prerequisites/Co- requisites	X
Detailed Course Description	X
Course Specific Learning Outcome and Assessment Tables • Discipline Specific • General Education Specific Learning Outcome and Assessment Tables	X
Example Weekly Course outline	X
Grade Policy and Procedure	X
Recommended Instructional Materials (Textbooks, lab supplies, etc)	X
Library resources and bibliography	X
Course Need Assessment. Describe the need for this course. Include in your statement the following information.	X
Target Students who will take this course. Which programs or departments, and how many anticipated? Documentation of student views (if applicable, e.g. non-required elective).	X
Projected headcounts (fall/spring and day/evening) for each new or modified course.	X
If additional physical resources are required (new space, modifications, equipment), description of these requirements. If applicable, Memo or email from the VP for Finance and Administration with written comments regarding additional and/or new facilities, renovations or construction.	X
Where does this course overlap with other courses, both within and outside of the department?	X
Does the Department currently have full time faculty qualified to teach this course? If not, then what plans are there to cover this?	X
If needs assessment states that this course is required by an accrediting body, then provide documentation indicating that need.	X
Course Design Describe how this course is designed.	X
Course Context (e.g. required, elective, capstone)	X

Course Structure: how the course will be offered (e.g. lecture, seminar, tutorial, fieldtrip)?	X
Anticipated pedagogical strategies and instructional design (e.g. Group Work, Case Study, Team Project, Lecture)	X
How does this course support Programmatic Learning Outcomes?	X
Is this course designed to be partially or fully online? If so, describe how this benefits students and/or program.	X
Additional Forms for Specific Course Categories	n/a
Interdisciplinary Form (if applicable)	n/a
Interdisciplinary Committee Recommendation (if applicable and if received)* *Recommendation must be received before consideration by full Curriculum Committee	n/a
Common Core (Liberal Arts) Intent to Submit (if applicable)	n/a
Writing Intensive Form if course is intended to be a WIC (under development)	n/a
If course originated as an experimental course, then results of evaluation plan as developed with director of assessment.	n/a
(Additional materials for Curricular Experiments)	n/a
Plan and process for evaluation developed in consultation with the director of assessment. (Contact Director of Assessment for more information).	n/a
Established Timeline for Curricular Experiment	n/a

Department of Architectural Technology

ARCH 1101 INTRODUCTION TO ARCHITECTURE

1 lecture hour and 6 lab/studio hours, 4 credits

Course Description: Introduction to architecture achieved through a visual literacy of New York City's built environment. Using the city as a living laboratory, students explore concepts of design, composition, and construction by sketching and writing about their direct experience of buildings. Accompanying lectures focus on freehand drawing techniques, concepts of composition, writing about buildings and their construction, and reading architectural drawings. Students develop graphic skills and the basic foundation to talk, write, and graphically express architecture and its construction.

Course context: This course provides a scaffolded introduction to degree programs through place-based learning and drawing and analysis. As a co-requisite of Design Foundations and a pre-requisite of Building Technology and Architecture History, students are exposed to various styles of architecture and methods of construction found in the city.

Prerequisites: CUNY proficiency in Reading and Writing; or CUNY proficiency in Reading with co requisite of ENG 092W if part of a learning community; or for high school students enrolled through collaborative programs or City Poly High School who have not yet taken the SAT or completed Regents requirements, a PSAT score of 48 or higher in Verbal and/or Writing or successful completion of six units of high school English with an average of 80 or above and a high school recommendation.

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

Suggested Text: Texts will be assigned according to the subject covered that day.

Suggested Reference: Varies depending upon the subject of the course

Course requirements: May vary depending upon course topic. Students will conduct research and present case studies as relevant to the materials and discussions presented in class and will write either a series of smaller papers or a semester term paper as determined by the professor.

Grading:	Module 1: Experiencing Architecture	50%
	Module 2: Analyzing Architecture	20%
	Module 3: Drawing Architecture	30%

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. Develop **Knowledge** from the range of architectural disciplinary perspectives presented in the course.	1. **Review** student observations of site visits and lectures and assess written, graphic and oral reports.
2. Utilize **Skills** and demonstrate knowledge needed to facilitate communication and critical thinking.	2. **Assess** student research and critical thinking abilities by monitoring weekly progress of lab work and readings.
3. **Integrate** knowledge and work productively to communicate ideas through oral, graphic and written media.	3. **Assess** the students' ability to integrate and communicate through peer and juried review of student presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Observe** with a critical eye and engage in discussion on the subject of the course. (Skill)	1. **Review** student observations and **Assess** the quality of critical thinking and contributions to discussions during oral and graphic presentations.
2. **Research** and investigate deeply into a given subject so as to contribute to the growth of knowledge. (Skill)	2. **Assess** student research abilities through written and graphic materials.
3. **Synthesize and Apply** what is learned to synthesize understanding and to complete assignments given in the class. (Skill)	3. **Assess** the students' ability to synthesize apply what is learned from lab work and through the grading of assignments.
4. **Communicate** effectively through presentations to the class using written oral and graphic media. (Skill)	4. **Assess** the students' ability to effectively present and communicate what is learned on a given subject.
5. **Communicate** effectively using a vocabulary developed throughout the course. (Skill)	5. **Assess** the students' use of professional vocabulary during quizzes, oral presentations and written assignments.

Weekly Course Outline:

While the specific details of each section will differ all courses will follow this basic outline:

Module 1: Experiencing Architecture

WEEK 1 **Introduction: Vitruvian Triad**

Introduction to fundamental concepts of architecture and methods of looking at and evaluating buildings. Students will be introduced to basic sketching techniques for documenting the observations upon which they will build their skills in the course of the semester. Readings will reinforce and build their technical vocabulary.

Sample lesson: Students will sketch simple volumes from two- and three-dimensional sources. Students will overlay photographs to discover the horizon line and vanishing points.

WEEK 2 **Surfaces and Openings**

Through the exploration of building facades students will learn how building surfaces are opened for windows and doors. Students will learn technical terms associated with facades such as fenestration, soffit, cornice, string course, lintel, etc. by sketching them and labeling their sketches.

Sample lesson: Students will write a one-page description of the façade they have drawn, using the the terms they have learned.

WEEK 3 **Modules, Bays, and Rhythms**

Similar to "Surfaces and Openings," this lesson will ask students to grasp concepts of organizational structures such as grids and repetitions through readings, demonstrations, and sketching assignments. Students will investigate building elements such as colonnades, bays, and loggias.

Sample lesson: Investigate the science of perspectival foreshortening through demonstration and practice. Examples of colonnades and gridded facades will be sketched from locations around Brooklyn.

WEEK 4 **Organization I: Symmetry**

Concepts of symmetry will be explored in historical examples and in actual buildings in downtown Brooklyn. Readings discussing the principles of classical symmetry will be assigned and discussed, followed by a lecture on the Renaissance church, villa, and palazzo. Students will be introduced to the classical orders.

Sample lesson: Students will sketch a classically-inspired building; identify the axes of symmetry, and label the features of the building. They will then write a one- to two-page description of their building identifying the major and minor axes and use the technical building vocabulary they have acquired thus far.

WEEK 5 **Organization II: Proportions**

Students will learn the principles of proportional systems through demonstrations supported by assigned readings. Students will analyze historic examples where such systems were used.

Sample lesson: Students will sketch pre-selected buildings in Brooklyn Heights (Borough Hall, for example) that clearly express proportional rigor. They will use the proportional system to scaffold their sketches and learn how these systems foreshorten from varying station points. In a short essay

they will describe the proportional system as they see it and describe how the architect used it to organize the components of the building.

WEEK 6 **Organization III: Balance**

Many buildings are organized as an assembly of several masses, each of which exhibits its own symmetry and proportion. Students will be introduced to examples where buildings of complex mass are balanced and discover how the connections between the masses are visually resolved.

Sample lesson: Students will sketch a complex building from multiple points of view and identify the multiple symmetries and overall organizational structure of the building. Students will sketch details on from the building where symmetries meet and are resolved.

WEEK 7 **Organization IV: Hierarchy**

Buildings, both simple and complex, exhibit visual hierarchy. Students will be introduced to examples of ways in which buildings exhibit hierarchy and deploy elements to reinforce that hierarchy.

Sample lesson: Students will sketch both a simple and a complex building and in each case identify the hierarchy. In an essay, they will describe how the hierarchy and how the elements of the building are used to reinforce that hierarchy.

WEEK 8 **From Elevation to Plan**

Students will discover the correspondence between the elevation of a building, which they see, and the plan of the building, which they don't. Examples from history will illustrate the interrelationship between plan, section, and elevation.

Sample lesson: Students will observe the four sides of a building, noting the openings, projections, bays, etc. They will sketch the plan of the perimeter of building based on their "best guess" by what they observed from the outside. They will then go inside and in a separate drawing sketch the plan. In separate drawings they will sketch multiple views of the interior space.

Module 2: Analyzing Architecture

Week 9 **Introduction to Site Planning**

Develop awareness of our everyday practice of site planning principles though team activity and presentation. Concepts covered will include site observation, site inventory and analysis, principles of climate and the process of selecting the best site for a given use.

Sample lesson: A Trip to the Beach.

Week 10 **Introduction to Structural Concepts**

Develop an understanding of basic structural principles through observation and analysis of built structures. Concepts covered include compression and tension, long and short spans, cantilevers, structural grids, lateral stability and materials.

Sample lesson: Blueprint reading. A review of blueprints of famous icons including the Statue of Liberty, the Eiffel tower, the St. Louis Arch, The Brooklyn Bridge and the Wright Brothers Plane. Complete a drawing assignment that reinforces structural principles.

Week 11 **Introduction to Building Construction and Assembly**

Develop an understanding of the sequence of building construction and assembly through observation of buildings in NYC under construction.

Sample lesson: Site visit and observation. Visit construction sites and document observations though photography & sketch. Review, interpret and analyze construction details. Research details & methods.

Module 3: Drawing Architecture

Week 12 **Introduction to Architectural Drawings: Plans and Elevation**

Develop awareness and familiarity with drawing types used in the typical architectural practice. Students will review and practice the use of drafting strategies and tools introduced in ARCH 1110 and apply these tools to a more complex drawing problem. Concepts covered will include review of orthographic projection drawings, introduction architectural graphic standards and notation. Understand the co-relation between different drawing types. Understanding and applying the architectural scale.

Sample lesson Part 01: Reading, matching and understanding plans elevations and sections of existing structures.

Sample Lesson Part 02: Drawing plans and elevations of a small existing structure. Apply architectural graphic standards.

Week 13 **Continuation Introduction to Architectural Drawings: Sections**

Students will learn to generate sectional architectural drawings. Different sectional drawings will be analyzed and graphic notation will be discussed in relation to expression of materiality; curtain wall vs. a masonry wall vs. wood frame etc.

Sample lesson: Extract a series of 5 sectional drawings referencing the plans and elevations drawn in the previous lesson. These drawings should reflect the distribution and relationship of interior space and apply standard graphic standards to reflect the tectonics of the structure.

Week 14 **Continuation Introduction to Architectural Drawings:**

Plan, elevation and section drawings generated by the students will be reviewed. Accuracy and legibility will be evaluated and discussed. Strategies for articulating drawings; applications of line weight, poche and textures will be discussed.

Sample lesson: refine all drawings to improve legibility, verify accuracy and application of architectural graphic standards.

Week 15 **Introduction to differentiating construction vs. design drawings**

Students will be introduced to concepts of graphic representation in relation to intention and desired communication. Students will observe, analyze discuss the difference between construction drawings and design drawings.

Sample lesson: Select one section drawing from the previous exercise, using it as a base generate two new drawings; one should be articulated as a construction drawing and the second as a design presentation drawing.

Course Activities:

Course format will include a combination of any of the following activities:

- **Field Trips / High Impact Learning Practices:**
  Field trips will look to visit existing buildings and construction sites, tour newly constructed buildings and urban spaces or visit institutions, including but not limited to museums, churches, or other colleges with discussions led by either the instructor or on-site experts in the field or the subject.

- **Lectures:**
  Lectures will be given by a qualified instructor and if warranted invited guest lecturers or experts in the field or subject.

- **Activities:**
  Students will participate in activities that provide them with the opportunity to apply what is learned in a given subject.

- **Research Activities:**
  Students will be given directed readings and be required to correlate their readings with the lab exercises. Supplemental research will be encouraged to promote a greater analytical and critical understanding.

- **Presentations:**
  Students will participate in written, oral and graphic presentation of course subjects and issues identified through their reading, writing, and lab work.

Modified Course Outlines of Existing Courses

Department of Architectural Technology

ARCH 1110 ARCHITECTURAL DESIGN I: FOUNDATIONS AND VISUAL STUDIES

1 lecture hour and 8 lab/studio hours, 5 credits

Course Description: A first-year foundational course that increases students' ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems.

Course context: This course is a required first step in the Design Studio sequence.

Pre or Co-requisites: ARCH 1101 Introduction to Architecture

Required Text: In the form of a reader:

1.Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, *pp.*44-57.
2. Elam, Kimberly. *Geometry of Design.* Pages 44-75.
3. Durer, Albrecht. *Of the Just Shaping of Letters.*
Web URL, PDF: <http://sean.gleeson.us/2006/03/08/durers-crazy-idea>
4. Benedict, William. *ARCH 121 SYLLABUS.* Pages 29-40.
5. *Rhino Level I and II Training Manuals* (Free from: http://download.rhino3d.com/Rhino/4.0/Rhino4Training)
6. Software Primers:
https://openlab.citytech.cuny.edu/fuselab/project-components/digitalspine/

Recommended texts:

Benedict, William. *Base, 121, 122, 123 Syllabi, Drawing Form, Creating Relationships*. San Luis Obipso, CA: El Corral Publications, 2007. PDF. <www.williambenedict.com>

Ching, Francis D.K. *Architecture: Form, Space, and Order (latest edition).* New York, NY: John Wiley & Sons, Inc., 1996 (or most recent). Print.

Elam, Kimberly. *Geometry of Design: Studies in Proportion and Composition*. New York, NY: Princeton Architectural Press, 2001. Print.

Hannah, Gail Greet. *Elements of Design: Rowena Reed Kostellow and the Structures of Visual Relationships.* New York, NY: Princeton Architectural Press, 2002. Print.

Zell, Mo*, Architectural Drawing Course: Tools and Techniques for 2D and 3D Representation,* 2008, Boston: Barron's. Print.

Ching, Frank, *Architectural Graphics.* 2009, Hoboken, NJ: John Wiley & Sons.

Lupton, Ellen, *Graphic Design: The New Basics.* 2008, New York: Princeton Architectural Press.

Tufte, Edmund, *Envisioning Information.1990*, Cheshire, CT: Graphics Press.

Tufte, Edmund, *Beautiful Evidence*. 2006, Cheshire, CT: Graphics Press.

Samara, Timothy, *A Handbook of Basic Design Principles Applied in Contemporary Design.* 2008, Providence: Rockport Publishers.

McCandles, David, *Visual Miscellaneum. 2009, New York, NY: Collins Design Publishers.*

Websites: Visual Economics, Information is Beautiful, Mathematica, and Google Earth/Maps resources

Required Tools:

1. Lead Holder
2. Lead Holder Sharpener
3. Leads: 2H, HB, H, 2B, 4B
4. 12" and 3" 30°/60° Triangle
5. 12" and 3" 45° Triangle
6. White Eraser
7. Erasing Shield
10. Alvin Adjustable Compass
11. Olfa Knife OR
12. #11 X-Acto Knife & Blades
13. 18" Metal Ruler w/ Cork backing
14. Super Glue
15. White Glue
16. Drawing Transport Tube
19. Ten sheets 11"x17" Vellum
20. 9"x12" Self-Healing Cutting Mat
21. Black Marker

8. 12" Architect's Scale
9. Drafting tape or drafting dots
17. Art Bin/Tackle box
18. 12" White Tracing Paper

Recommended Tools:
French Curves or Ships curve
Prismacolor Color Pencils: Black, 20%, 50%, 70% Gray, White
Micron Permanent Black Ink Pens: 005, 01, 03 Weights
Faber-Castell Permanent Black Ink Pens: S, F, M Weights
Two (2) sheet of 18x24 Mylar
scum x

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: This course is the first design studio which will include lectures, student presentations, guest critics, in-class workshops, and charrettes. The students will be given problems in a week-to-week sequence. Each problem will involve a cyclical iteration of the design process in which new skills in a variety of media will be acquired. Students will give verbal and graphic presentations of their designs which will demonstrate agility with vocabulary, concepts, and result in a critical class discussion to assess quality of the work. Work will be completed both in and outside of class. Written evaluation for each week will be provided by the professor and fellow classmates. Students should keep record of their own progress in a spreadsheet.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model.	1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Inspect** students' portfolios for quality of documentation and editing as well as organization.
2. **Communicate** ideas and information both verbally and through writing.	2. **Review** students' written descriptions of design work and feedback and **Assess** the students' use of professional vocabulary during oral presentations.
3. Develop and **apply** professional vocabulary.	**3. Assess** the students' use of professional vocabulary during oral presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Implement** an iterative design process from problem identification, information gathering, solution generation and evaluation,	1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Inspect** students' portfolios for quality

implementation, presentation, and overall project evaluation. (Knowledge)	of documentation and editing as well as organization.
2. **Incorporate** design concepts and vocabulary into design process and presentations. (Knowledge)	2. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Assess** the students' use of professional vocabulary during oral presentations
3. **Produce** analog and digital orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)	3. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Review** students' 2-D and 3-D analog and digital representation skills.
4. **Utilize** analogue and digital media to create drawings and models. (Skill)	4. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Review** students' 2-D and 3-D analog and digital representation skills.
5. Recognize the complexity of the physical world. (Knowledge)	5. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Review** students' drawing and modeling work where students must exhibit their visual representation skills
6. Demonstrate understanding of computer hardware and software as used in architectural practice (Knowledge)	6. **Review** students' 2-D and 3-D analog and digital representation skills.
7. Demonstrate knowledge of graphic conventions and methods of organization (Knowledge and Skill)	7. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D).
8. Document analog materials into digital format and process and edit for presentations and portfolio. (Skill)	8. **Review** students' 2-D and 3-D analog and digital representation skills and **Observe** students' use and manipulation of computer hardware and software.
9. Create analog and digital 3-D models of medium geometric complexity. (Skill)	9. **Review** students' 2-D and 3-D analog and digital representation skills.
10. **Manipulate** vector and raster files. (Skill)	10. **Observe** students' use and manipulation of computer hardware and software.

Grading:

Class Participation and Attendance	10%
Weekly Sketches	10%
Assignments and in-class exercises:	
Project 01:	10%
Project 02:	15%
Project 03:	10%
Project 04:	25%
Project 05:	10%
Course Portfolio	10%
TOTAL	**100%**

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and

citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

Course Outline: At the beginning of each semester, students should prepare a spreadsheet with each exercise and their relative grade weights. Each exercise will have a Craft grade and a Design grade. Students should keep track of their own progress in this way.

WEEKLY SKETCHES
A total of 10 weekly sketches will be completed per semester as homework. Each sketch has a clearly defined focus and method such as blind contour form study, positive and negative space, shade and shadow, texture, light, depth, perspective, and scale. Sketches will explore a variety of paper and drawing media. Thumbnail study sketches should be completed in a sketchbook prior to preparing the final sketch on 8 ½"x11" paper. Hand letter on the back of each sketch the intention, time it took to complete, and the location.

WEEK 1:

STUDIO
Lecture: **RECTILINEAR FORM:** Identify axis in rectilinear forms and recognize hierarchy and dominance of volumes based on proportion. Group forms to create a visually pleasing unified object.

Lab & Homework: **EXERCISE 1**
1. Construct nine (9) rectangular volumes of white clay of varying sizes, but all smaller than 4" in the greatest dimension.
2. Identify dominant forms, subdominant forms, and subordinate forms. Identify the dominant axis of each volume.
3. Assemble groupings of 3 rectangular volumes (a total of 3 groupings) and secure to a ½" thick foamcore base.

Reading: Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships, *pp.*44-57.

VISUAL STUDIES
Lecture: An Overview lecture will introduce the language of architectural representation and visualization, formative terms and concepts. Additional lecture topics include an introduction to computer hardware and peripherals, and file types and folder structure.
Assignment: Template generation for digital documentation and organization of work generated in Foundations and Visual studies courses.

WEEK 2:

STUDIO
Lecture: **DELINEATING RECTILINEAR FORM:** Represent 3-D form in 2-D drawings which communicate depth and relationships between parts. Present and review Exercise 1.

Lab & Homework: **EXERCISE 2**
1. Work with one of your groupings from the previous exercise. Construct multi-view drawings of your grouping by tracing freehand over drafted construction lines.
2. Indicate the dominant, subdominant, and subordinate forms graphically. Label and dimension the axis of each volume. Indicate the ratio of length to width.

VISUAL STUDIES

Lecture: **COMPOSED IMAGES**: Present examples of successful hand and digitally produced drawings and graphics, and photography from small objects in the studio to large landscape photos. Discuss image **resolution**, framing, composition, balance, contrast, and hierarchy. These concepts will reinforce the weekly sketches in ARCH 1110. Introduce Basics of Photoshop: demonstrate image manipulation tools such as levels, contrast, hue/saturation, cropping, rotation, and image and canvas size. Post-process digital photos and scanned images.

Concepts & Vocabulary: Framing, composition, balance, contrast, hierarchy, texture, media, white space, paper sizes (A4 vs. 8.5x11)
Assignment: Use the digital photograph of Rectilinear Forms (1110, Week 1, Exercise 1). In Photoshop resize the image and check its resolution. Correct any issues with color, brightness, and distortions. Clean Images to be portfolio ready.
Skills: Digital photography and output to projector, and printer, Image Framing, composition, balance, contrast and hierarchy, digital camera settings, output methods (digital image, projector, printer) and resolution (dpi).

WEEK 3:
STUDIO
Lecture: **PERSPECTIVE:** Learn how to construct a perspective from a plan and elevation.

Lab & Homework: **EXERCISE 3**

1. Working with Project 2, construct a minimum of three perspectives that describe the experience of moving through the designed space.
2. Present perspectives with construction lines.
3. Work on adding entourage.
4. Develop perspectives with shade and shadow, entourage, etc. as far as possible.
5. Scan perspectives and present a minimum of three (3) 11x17 sheets with the fourth sheet showing your plan with the position of the viewer. All sheets laid out in Adobe In Design

Reading: Yee, Rendow. Architectural Drawing: A Visual Compendium of Types and Methods. Selected pages between: 181-303 and 367-425.

VISUAL STUDIES
Lecture: **ANALOG AND DIGITAL GRAPHICs:** Introduce scanning and image manipulation. Demonstrate scanning hardware and software. Review image manipulation tools such as levels, contrast, hue/saturation, cropping, rotation, and image and canvas size. Introduce layers.
Concepts & Vocabulary: Contrast, color affect, proportions, size.
Assignment: Scan digital image chosen for 1110 Week 3, Exercise 3. Proceed analyze the photo for number, position, size, shape, direction, texture, surface quality, and color by separating elements in different layers in Adobe Photoshop.
Skills: Scanning, and Image Editing Software (Adobe Photoshop).

WEEK 4:
STUDIO
Lecture: **BASIC PATTERN AND GEOMETRY RECOGNITION:** Identify attributes of an illustration and record their properties and affect. Identify underlying geometries and proportions of an illustration. Present and review Exercise 2.

Lab & Homework: **EXERCISE 4**

1. Identify the basic pattern areas in an illustration (magazine or architectural lecture series poster) by outlining their contours on tracing paper.
2. Describe the attributes: number, position, size, shape, direction, texture, surface quality, and color. Explain why these attributes enhance or support the intent of the illustration.
3. Create four 11”x17” presentation boards with the original clipping, the basic pattern area identification overlay, and inventory of attributes in either horizontal or vertical format. Label all parts of the presentation with lettering.
4. Using the same illustration, identify the overall organizing geometries of the page and its’ objects by hardline drafting over them on tracing paper.
5. Label dimensions, radii, angles, and identify the center of the page. Describe the geometric layout in sentence format.

6. Scan the illustration and overlay. Create four 11”x17” presentation board with the clipping, overlay, and description.

Reading: Theil, Philip. Visual Awareness and Design. pp. 68-81.
Reading: Elam, Kimberly. *Geometry of Design.* Pages 44-75

VISUAL STUDIES
Lecture: **TYPOGRAPHY AND PAGE COMPOSITION:** Introduction to page composition of multiple components (images, text, and graphics). Working with photographs and sketches from the previous exercises, explore several page layouts and incorporate graphics and text. Discuss differences of content and conventions between construction drawing and presentation drawings.
Concepts & Vocabulary: Geometric and spatial relationships, white space, hierarchy, page flow, scale.
Assignment: Working with 1191, Exercise 3, concentrate on sheet composition and create title block in InDesign. Note differences in file size, quality of raster text vs. non-raster text, ease of layout manipulation, layer management, etc.
Skills: Image Editing Software (Adobe Photoshop/Adobe InDesign), layer management and output to printer.

WEEK 5:
STUDIO
Lecture: **GEOMETRIC HIERARCHY:** The designs created in the Shape Generation project, Exercise 9, visually establish a flat two-dimensional world. The challenge of the Hierarchy project is to see new possibilities in these familiar designs. The goal of this project is develop a visual hierarchy of lines, balance weight and motion and implied shapes and patterns. The project will continue to investigate ideas related to generating designs within a set of constraints, generating alternatives, concepts of symmetry and asymmetry and the skills and techniques associated with traditional and digital drafting. **Present and review Exercise 4.**

Lab & Homework: **EXERCISE 5**
1. Take the geometry analysis from exercise 4.
2. Double the size of the square to 6”x6”.
3. Using line weight, create a sense of hierarchy between the forms.
4. Redraw your drawings with pen on vellum.
5. Scan your drawings. Add a title and print on 11”x17” paper.

Reading: Benedict, William. *ARCH 121 SYLLABUS.* Pages 37-42.

VISUAL STUDIES
Lecture: **RASTER VS. VECTOR:** Introduction to raster versus vector software languages. Recreate the previous exercise using a vector based software. Analyze the differences in interface, usability, ease of editing, and output quality. Add graphic elements such as lines and areas to help reinforce page design. Discuss when one software type is appropriate over another. Reinforce page composition methods for successful communication.
Concepts & Vocabulary: Eye movement, information visualization and communication.
Assignment: Duplicate 1110 Exercise 5 Basic Geometry Recognition using Adobe Illustrator. Format and layout in either Adobe Illustrator or InDesign. Output is 11x17. Use hand-drafted drawings as underlays.
Skills: Vector based page-layout/drawing software (Adobe Illustrator), 2D drawing and editing

WEEK 6 & 7:
STUDIO
Lecture: **PAPER LANDSCAPES:** Transforming two dimensional compositions into three dimensional compositions. Consider scale, proportion, hierarchy, circulation and space. **Present and review Exercise 5.**
Lab & Homework: **EXERCISE 6**
1. Take the geometry analysis from exercise 5.
2. Scale the patterns to fit in an 11x17 Piece of paper.
3. Generate a set of rules using based on the line types used in the composition to create a tree dimensional exploration. i.e: thin line = fold; medium line = cut; thick line = extrusion.

4. Insert human scale into the exploration and generate a series of iterations exploring how human scale relates to the different spaces.

VISUAL STUDIES
Week 6
Lecture: **VECTOR DRAWING**: Working with a drafted drawing from ARCH 1110 add depth cues such as line weight, shade/shadow. This should be done by hand using pen and pencil, and should be also be done by scanning the image and tracing in a vector based software.
Concepts & Vocabulary: Line weight, shade and shadow, depth, foreground/middleground/background
Hand Skills: pen and pencil medium, rendering techniques
Assignment: Work with 1110, Exercise 2B, Geometry recognition. Layout in Illustrator or InDesign.
Skills: Drawing in a vector-based software (Adobe Illustrator), use of value and texture

Week 7
Lecture: **PORTFOLIO PART II:** Review image organization and hierarchy, text as a graphic element, storytelling through composition and organization of information.
Assignment: Continue to develop portfolio design and layout. Add project 02.

WEEK 8 & 9:
STUDIO
Lecture: **DURER'S ALPHABET:** Understand geometric proportions described in written form to draft an accurate representation through multi-view orthographic and paraline drawings. Present and review Exercise 4.
Lab & Homework: **EXERCISE 7**

1. Based on Albrecht Durer's written description, choose a letter of the alphabet and construct a precise and perfectly proportioned drawing. Preserve your construction lines.
2. Imagine the letter was extruded to fit a 4" cube then draw all 6 sides of the object. Draw a plan oblique view and a set of multi-view drawings (including sections) of the letter and add shading.
3. Generate an Axonometric drawing of the letter and cut 2 sections through it.

Reading: Durer, Albrecht. *Of the Just Shaping of Letters.*
Web URL, PDF: http://sean.gleeson.us/2006/03/08/durers-crazy-idea

VISUAL STUDIES
Lecture: **Vector Drafting in CAD**: Introduce 2D-CAD (AutoCAD) drafting and highlight similarities and differences between hand drafting and digital drafting (line weights, layer management, blocks for page size and titleblock). Highlight differences between page layout in CAD versus InDesign/Illustrator/Photoshop.
Concepts & Vocabulary: Line weight, Layers, pens, blocks, Mtext, drafting tools (line, polyline, circle, copy, etc.)
Assignment: Draft any of the previous hand drafted exercises from 1110 (Exercise 2, Exercise 4, Exercise 5) include at least one drawing that was not previous hand-drafted. (Total drawings should include: plan, elevations, sections, plan and or elevation oblique and/or isometric).
Skills: CAD 2D drafting and Layout

WEEK 10 & 11:
STUDIO
Lecture: **GRIDS/CUBE PART 1:** Use geometric proportions to derive a 6-sided form which addresses a given use. Present and review Exercise 5.
Lab & Homework: **EXERCISE 8**

1. Set up 6 - 4"x4" boxes on a sheet of vellum. In each box you will develop a different grid system based on rhythm and proportion as discussed in class. Tools : AutoCAD & Illustrator. Label proportions and repetitions. Use layers in Adobe Illustrator to create transparencies and levels in the grid.
2. Apply each of the "rendered" 4"x4" grids to a 4" foam cube. Carefully consider how the lines wrap around the volume. Consider what happens to spaces in between the grid lines, at the edges and at areas with varies level indicated by the transparent or gradient fills.
3. Cut into the foam cube based on the lines of your grid. Use appropriate tools to get precise and detailed cuts per your 4"x4" grid drawing.
4. Take 3 high quality photos of each foam model. Pay close attention to light, shadow to highlight your forms. Each photo must fill an 11x17 page.

5. Create a 2D hand drafted multi-view drawing of your cube with shading to indicate depth on vellum.

VISUAL STUDIES
Lecture: **3D MODELING:** Introduce architectural 3D digital modeling by showing examples. Examples display various modes of output (screen capture, rendered, photo-realistic rendering, 3D print).
Concepts & Vocabulary: Nurbs, vector based drawing, Boolean operations, Light, shade and shadow, foreground/middleground/background, horizon, scale

Assignment:

Week 9
Generate a three Dimensional grid and create a series of 9 compositions extruding rectilinear forms utilizing the grid to constrain the proportions and volume of the parts. Use points, curves, surfaces, solids, and Boolean operations.

Week 10
Edit the 9 compositions generated last week using the Boolean operations. Use the operation to investigate the potential spaces generated at the intersections of volumes. Render each edited model.
*Skills***:** 3D modeling software (McNeel Rhinoceros), curves, surfaces, Booleans, Rendering software (Rhino Render and V-Ray)

WEEK 12:
STUDIO
Lecture: **CUBE PART 2:** The exploded sectional isometric
Lab & Homework: **EXERCISE 9**
1 Create an exploded isometric sectional drawing of your cube.
2 First draw an isometric of your foam cube.
3 Select sectional cuts approximately ½" from the surface of each face.
4 Use lineweights, hatching and colored lead to identify the cross sectional areas.
5 Use construction lines and heavy dashed lines to extend (explode) the section cuts away from the cube to illustrate the section clearly.
6 Final drawings should be on vellum paper sized to show all six sectional cuts clearly and with no overlaps on the original cube at the center of the drawing.
Reading: Benedict, William. *ARCH 121 SYLLABUS.* Pages 29-36.

VISUAL STUDIES
Lecture: **Workflow: Rhino > Illustrator > InDesign.** Strategies for using multiple software applications to create composite presentation drawings

Concepts & Vocabulary: Saving views and overlaying drawing and renderings. Hierarchy and legibility of information.
Assignment: Output vector drawings and renderings using Rhinoceros of the 9 model iterations. Using illustrator create composite drawings overlaying the vector drawing over the rendering. Create a catalog of all the composite images in InDesign
Skills: workflow

WEEK 13:
STUDIO
Lecture: **Folded Planes:**
Lab & Homework: **EXERCISE 10: Folded Planes**
Step 1: Carefully draw a 1/2" X 1/2" grid on both sides of an 11" x 17" sheet of **4-ply (1/16" thickness)** Bristol Board or any other material with the same thickness.
Step 2: Score, fold, and tab each sheet into a 3-dimensional composition. Note that scoring the backside of the plane prior to folding creates neat edges. Rules:
- Only 90 degree connections
- No coplanar, edge connected to edge or overlap, conditions
- Minimum 1" overlap on all tabbed connections.
- No piece may measure less than 1"in any direction
- You may not detach and discard any of the original planes

- The composition must be stable and stand on its own
- You may not use glue.

Step 3:

- Photograph yourself or one of your classmates performing the activities you imagine when inhabiting the space (standing, stretching, kneeling.) In Photoshop reduce the images to either 1/4"=1'-0" or 1/8"=1'-0" depending on the scale you have been working on the model. Print and place them in the model in order to show the space activated with program.

PART B

Using the same folding technique translate the solids of your foam cube to folded planes. Steps:
- Analyze your foam cube into structural elements or partitions versus solids.
- Organize in bigger groups the **solids** of your cube composition.
- Recreate the resulted bigger shapes using the folded plane technique. You should draw a 1/2" X 1/2" grid on them on both sides.
- Tape them in such a way that the overall result recreates the foam cube composition, this time though, using folded planes.

VISUAL STUDIES

Lecture: **DIGITAL RENDERING:** Photomontage creation

Assignment: Continue refining and adding context to the rendered output. Render in various materials, but each rendering should contain a limited palette of materials (1-2). Post-process rendered output in a raster based software to add context. Use Exercise 11.

Skills: 3D modeling software (McNeel Rhinoceros) and rendering software (V-Ray), post-processing entourage elements with Photoshop

WEEK 14:

STUDIO

Lecture: **Folded Planes: Sections.** How to construct an architectural section.

Process
- Draw a thick horizontal line as your ground.
- Measure volumes and transfer to your mylar sheet.
- Highlight as dark outline filled with black ink all your cut areas.
- Shade accordingly projected areas. In other words shade accordingly areas that you do not cut but still see them as elevations. Areas closer to your sectional plane are brighter and those that are further away are darker.
- Use coherent techniques for all your shadings.
- Add silhouettes in scale to your sectional drawings interacting with the space.

VISUAL STUDIES

Lecture: **Laser cutting:** how to prepare Rhino files for laser cutting

Assignment: Select the most successful 3-D model iteration and prepare the file for Laser Cutting. Laser cut and assemble the model for presentation.

WEEK 15:

STUDIO

Lecture: **FINAL PRESENTATION:** Final pin-up and presentation of all cube exercise. Verbal presentations by students with a review jury of at least one outside critic. Written feedback on student performance completed and distributed.

VISUAL STUDIES

Assignment: Final portfolio presentation

Bibliography:

Hannah, Gail Greet. Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships. New York: Princeton Architectural Press, 2002. Print.

Lupton, Ellen and Jennifer Cole Phillips. *Graphic Design: The New Basics.* New York, NY: Princeton Architectural Press, 2008. Print.

Theil, Philip. Visual Awareness and Design: An Introductory Program in Conceptual Awareness, Perceptual Sensitivity, and Basic Design Skills. Seattle: University of Washington Press, 1983. Print

Zell, Mo. Architectural Drawing Course: Tools and Techniques for 2D and 3D Representation. Hauppauge, NY: Barron's Educational Series, Inc., 2008. Print.

I have read and acknowledge the above written syllabus for Arch 1110: (Your Full Name)
Create PDF and post online

Department of Architectural Technology

ARCH 1205 BUILDING TECHNOLOGY I

1 classroom hour, 6 lab/studio hours, 4 credits

Course Description: Introduction to materials of construction and their properties. ARCH 1205 continues the development of architectural drawing, sketching, and drawing analysis skills introduced in ARCH 1101.

Course Context: This is the first course in the Building Technology sequence required for both the AAS and the BTech degrees offered by the Department of Architectural Technology. Each course in this sequence is a pre-requisite for the following course. There are four Building Technology courses.

Prerequisites: ARCH 1101

Pre- or corequisites: MAT 1275 or higher

Required Texts:

1. Ching, Francis. *Building Construction Illustrated*. John Wiley and Sons, 2008.
2. Roth, Leland M. *Understanding Architecture: Its Elements, History, and Meaning.* New York, NY: Icon Editions, 1993. Print.

Recommended Texts:

1. Ramsey, Charles George, Harold Reeve Sleeper, and Bruce Bassler. *Architectural Graphic Standards: Student Edition (Ramsey/Sleeper Architectural Graphic Standards Series)*. John Wiley and Sons,2008.
2. Ching, Francis. *Architectural Graphics, 5th Edition.* John Wiley and Sons, 2009.
3. Allen, Edward. *Fundamentals of Building Construction: Materials and Methods, 6th Edition*. John Wiley and Sons, 2014.

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: This course will combine a discussion series delving into fundamentals of architectural technology and studio lab time to develop a series of technical drawings. A portfolio will be developed to document the studio lab work as the semester progresses. Field trips will offer first hand on-site investigation of the core issues of architectural technology.

Grading: Final grade will be determined according to the following grade weighting:

50% Studio Lab Assignments
20% Sketchbook Assignments
15% Drawing Analysis
10% Text Book/Reading Notes
5% Presentations

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Acquire tools for lifelong learning** – how to learn, how they learn.	1. **Assess** student engagement with the course material through the sketchbook assignments, textbook notes and presentations, and technical drawing assignments using rubrics.
2. **Manipulate and apply** geometric, proportional and scale systems.	2. **Review** students' technical drawings assignments where students must exhibit their understanding through accuracy, correct use of line weight and scale, and annotations.
3. Develop and **apply** professional vocabulary.	**3. Assess** the students' use of professional vocabulary during oral presentations.
4. Recall and recite the key terms, properties, and fabrication techniques of the materials reviewed in the lectures and readings.	**4. Assess** the students' ability to recall and recite the key terms and concepts during textbook presentations and through review of textbook notes, and sketchbook and technical drawing annotations.
5. Understand and apply professional etiquette to classroom situations**.**	**5. Assess** the students' use of professional vocabulary and etiquette during discussion and oral presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Analyze** assemblies and details through research and visual observation. (Skill)	1. **Review** students' technical drawings assignments where students must exhibit their understanding through accuracy, correct use of line weight and scale, and annotations and **assess** the students' ability to identify architectural elements and to compare and contrast buildings.
2. **Sketch and draft** details in orthographic and 3 dimensional views in analogue and digital media. (Skill)	2. **Review** students' field notes and final drawings for careful observation and accuracy in documenting existing conditions.
3. **Carefully Observe, Survey, and Document** Existing Conditions. (Skill)	3. **Review** students' field notes and final drawings for careful observation and accuracy in documenting existing conditions.

Sample Course Outline:

CLASS MEETINGS: 1+2
Learning Objectives:
Develop and apply a professional vocabulary of architectural terminology.
Manipulate and apply geometric, proportional, and scale systems.
Course Introduction:
Knowledge Organization: Architectural Design, Buildings, Structure and Envelop + Baseline Assessment
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #1: Plan Drawing + Analysis
Homework:
Complete Technical Drawing Assignment #1 Set Up ePortfolio
Sketch Book #1: Diagrams for a Shelter
Text Book/Reading and Notes:
Selection of readings from Understanding Architecture

CLASS MEETINGS: 3+4
Learning Objectives:
Develop and apply a professional vocabulary of architectural terminology. Manipulate and apply geometric, proportional, and scale systems.
Sketch and draft orthographic and 3 dimensional views of buildings and details in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #2: Plan + Axon Drawing + Analysis
Homework:
Complete Technical Drawing Assignment #2 Sketch Book #2: Studies of Architectural Plans
Text Book/Reading and Notes:
Selection of readings from Understanding Architecture

CLASS MEETINGS: 5+6
Learning Objectives:
Carefully Observe, Survey, and Document Existing Conditions
Develop and apply a professional vocabulary of architectural terminology.
Text Book/Reading Presentation + Discussion:
ARCHITECTURAL DESIGN
Lab Assignment:
Park Pavilion Site Visit / Field Documentation
Sketch Book #3: Annotation of Pavilion Details and Parts
Homework:
Sketch Book #3: Annotation of Pavilion Details and Parts

CLASS MEETINGS: 7+8
Learning Objectives:
Analyze assemblies and details through research and visual observation.
Sketch and draft orthographic and 3 dimensional views of buildings and details in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #3: Park Pavilion Plan, Axon, Section
Homework:
Continue Technical Drawing Assignment #3
Sketch Book #3: Annotation of Pavilion Details and Parts
Text Book/Reading and Notes:
Ching, Building Construction Illustrated, Building in Context p. 1.02, Sustainability p. 1.03, Green Building pp. 1.04-1.06, The Building pp. 2.02-2.04

CLASS MEETINGS: 9+10
Learning Objectives:

Analyze Assemblies and details through research and visual observation.
Sketch and draft orthographic and 3 dimensional views of buildings and details in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #3: Park Pavilion Plan, Axon, Section
Homework:
Continue Technical Drawing Assignment #3
Sketch Book #3: Annotation of Pavilion Details and Parts
Text Book/Reading and Notes:
Ching, Building Construction Illustrated, Building Materials pp. 12.02-12.03, Wood pp. 12.11-12.14, Masonry pp. 12.06-12.07, Stone p. 12.10

CLASS MEETINGS: 11+12
Learning Objectives:
Recall and recite key terms, material properties, structural typologies, and envelope system reviewed in the discussions and readings.
Material Lab:
Masonry and Stone Site Walk / Field Documentation
Sketch Book #4: Masonry Construction Field Documentation
Material Lab:
Wood Site Walk / Field Documentation
Sketch Book #5: Wood Construction Field Documentation
Homework:
Complete Technical Drawing Assignment #3
Text Book/Reading and Notes: Ching, Building Construction Illustrated, Concrete pp.12.04-12.05, Steel pp. 12.08-12.09, Glass pp.12.16-12.17, Concrete Beams and Slabs pp. 4.04-4.07, Structural Steel Framing 4.14-4.18

CLASS MEETINGS 13+14
Text Book/Reading Presentation + Discussion:
MATERIAL PROPERTIES, WOOD, MASONRY, STONE
Assessment/Review:
CYCLE OF SELF-DIRECTED LEARNING + PROGRESS ASSESSMENT
Homework:
Refection on Self-Directed Learning Sketch Book Catch Up
Text Book/Reading and Notes: Ching, Building Construction Illustrated, Curtain Walls pp. 7.24-7.26, Masonry Veneer pp. 7.28-7.30, Moisture & Thermal Protection pp. 7.02, 7.39-7.47

CLASS MEETINGS: 15+16
Learning Objectives:
Acquire tools for lifelong learning - how to learn, how they learn.
Recall and recite key terms, material properties, structural typologies, and envelope system reviewed in the discussions and readings.
Material Lab:
Concrete Site Walk / Field Documentation
Sketch Book #6: Concrete Construction Field Documentation
Material Lab:
Steel Site Walk / Field Documentation
Sketch Book #6: Steel Construction Field Documentation
Text Book/Reading and Notes: Ching, Building Construction Illustrated, Thermal Comfort pp. 11.03-11.04 Heating & Cooling Loads p. 11.09 Window Elements pp. 8.22-8.23, Insulating Glass p. 8.30 Site and Climate Impacts pp. 1.14-1.22

CLASS MEETINGS 17+18
Text Book/Reading Presentation + Discussion:
MATERIAL PROPERTIES, CONCRETE AND STEEL CONSTRUCTION
Assessment/Review:
CYCLE OF SELF-DIRECTED LEARNING + PROGRESS ASSESSMENT
Homework:
Refection on Self-Directed Learning Sketch Book Catch Up
Text Book/Reading and Notes:

Ching, Building Construction Illustrated, Buildings pp. 2.02-2.03 Loads on Buildings pp. 2.08-2.17 Structural Units pp. 2.19-2.25

CLASS MEETINGS: 19+20
Learning Objectives:
Survey Existing Conditions
Sketch and draft orthographic and 3 dimensional views of buildings and details in analogue and digital media.
Lab Assignment:
Case Study Site Visit / Field Documentation
Sketch Book #7: Case Study Field Notes and Diagrams TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation
Homework:
Continue TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation+Analysis
Sketch Book #7: Case Study Field Notes and Diagrams
Text Book/Reading and Notes:
Ching, Building Construction Illustrated, Foundation Systems pp. 3.02-3.10

CLASS MEETINGS: 21+22
Learning Objectives:
Sketch and draft in orthographic and 3 dimensional views in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation+Analysis
Homework:
Continue TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation
Text Book/Reading and Notes:
Ching, Building Construction Illustrated, Floor Systems pp. 4.02-4.03 Wall Systems pp. 5.02-5.03 Roof Systems pp.6.02-03,
Mark, Architectural Technology, Walls and Other Vertical Elements pp. 52-74

CLASS MEETINGS: 23+24
Learning Objectives:
Acquire tools for lifelong learning - how to learn, how they learn, knowledge of resources.
Recall and recite the key terms, properties, and fabrication techniques of the materials reviewed in the lectures and readings.
Text Book/Reading Presentation + Discussion:
STRUCTURAL SYSTEMS
Assessment/Review:
COURSE REFLECTION + CYCLE OF SELF-DIRECTED LEARNING PROGRESS ASSESSMENT
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation+Analysis
Homework:
Refection on Self-Directed Learning
Continue TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation

CLASS MEETINGS: 25+26
Learning Objectives:
Sketch and draft in orthographic and 3 dimensional views in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation+Analysis
Homework:
Continue TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation

CLASS MEETINGS: 27+28
Learning Objectives:
Sketch and draft orthographic and 3 dimensional views of buildings and details in analogue and digital media.
Lab Assignment:
TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation+Analysis
Homework:
Complete TECHNICAL DRAWING ASSIGNMENT #4: Plan+Section+Elevation Sketch Book Portfolio Compilation
E-portfolio Cleanup and Organization

CLASS MEETINGS: 29+30
Learning Objectives:
Develop and apply a professional vocabulary of architectural terminology.
Lab Assignment:
Drawing Set Compilation and Coordination
Oral Presentation of Drawing Set
Assessment/Review:
COURSE REFLECTION + FINAL ASSESSMENT

Department of Architectural Technology

ARCH 1210 ARCHITECTURAL DESIGN II: FOUNDATIONS AND VISUAL STUDIES

1 lecture hour and 8 lab/studio hours, 5 credits

Course Description: A first-year foundational course that increases students' ability to perceive visual cues, create visual design, formulate concepts, and render ideas in two or three dimensions. Students use a combination of hand and digital skills to aid in the creation and interpretation of three dimensional objects and space, and the delineation of the same using standard projection systems.

The Visual Studies component of the course builds on the knowledge of architectural representation and visualization obtained in Foundations and Visual Studies I. The course provides training in design tools that will strengthen visual, verbal, and graphic aspects of design and representation skills and will continue to build design and representation techniques and workflows that will prepare them for future coursework and professional practice.

The course focuses on:

- Precision and craft in physical models and drawings, including basic rendering techniques
- Precision and craft in digital models and drawings, including basic rendering techniques
- Understanding of differences between physical and digital techniques in architectural design and representation, and how the two can be combined into effective workflows
- Effective digital file management and organization
- Effective arrangement of drawings, diagrams, graphics, and text onto presentation boards and in portfolios
- Clear representation of geospatial information
- Ability to intelligently discuss design concept and process in oral presentations

Course context: This is the second required course in the design foundations sequence. It is a prerequisite for the subsequent studio course.

Prerequisites: ARCH 1110 with a grade of C or higher

Co-requisites: none

Required Texts:

1. Ching, Francis D. K. *Architecture--form, Space, & Order*. Hoboken, N.J: John Wiley & Sons, 2007
2. Software Primers *for Rhino, Illustrator, InDesign, Photoshop, and VRay located at https://openlab.citytech.cuny.edu/fuselab/softwarefabrication-tutorials/*

Additional readings will be provided to the students.

Recommended Texts:

1. Ching, Francis D. K, and Steven P. Juroszek. *Design Drawing*. Hoboken, N.J: John Wiley & Sons, 2010.
2. Dunn, Nick. *Architectural Modelmaking*. London: Laurence King Pub, 2010.
3. Hannah, Gail G. *Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships*. New York: Princeton Architectural Press, 2002.
4. Janson, Alban and Florian Tigges. *Fundamental Concepts of Architecture: The Vocabulary of Spatial Situations*. Birkhauser, 2014.
5. Mills, Criss. *Designing with Models: A Studio Guide to Making and Using Architectural Design Models*. Hoboken, N.J: John Wiley & Sons, 2005.
6. Rasmussen, Steen E. *Experiencing Architecture*. Cambridge Mass.: M.I.T. Press, 1964.

Required Supplies:

Architectural scale
12" Roll of tracing paper
Sketchbook
White glue
Olfa Knife and replacement blades
12" or 18" metal ruler w/ cork backing
9" x 12" self-healing cutting mat
Lead, Lead holder and Sharpener
12" adjustable triangle
Eraser and erasing shield
Drafting tape
Box of pushpins
Drawing transport tube

Additional supplies and materials to be discussed in class.

Attendance Policy: No more than 10% (3) absences are permitted during the semester. For the purposes of record, two late arrivals (more than 15 minutes) are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: This course is a design studio which will include lectures, student presentations, guest critics, in-class workshops, and charrettes. Each design problem will require students to engage in an iterative design process through which they will acquire new skills in a variety of media. Students will deliver verbal and graphic presentations of their designs that will demonstrate agility with vocabulary and concepts and result in a critical class discussion to assess the quality of the work. Work will be completed both in and outside of class. Students' work will be evaluated at each class meeting. Students are encouraged to keep record of their own progress.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model.	1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Inspect** students' portfolios for quality of documentation and editing as well as organization.
2. **Communicate** ideas and information both verbally and through writing.	2. **Review** students' written descriptions of design work and feedback and **Assess** the students' use of professional vocabulary during oral presentations.
3. **Develop** and **apply** professional vocabulary.	**3.** **Assess** the students' use of professional vocabulary during oral presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Implement** an iterative design process from problem identification, information gathering, solution generation and evaluation, implementation, presentation, and overall project evaluation. (Knowledge)	1. **Observe** students' progression from simple to complex thinking as shown in sketches and completed projects and **Review** students' selection of drawing techniques.
2. **Incorporate** design concepts and vocabulary into design process and presentations. (Knowledge)	2. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Assess** the students' use of professional vocabulary during oral presentations
3. **Produce** analog and digital orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)	3. **Review** students' 2-D and 3-D analog and digital representation skills and **Inspect** student digital files for use/application of professional standards.
4. **Utilize** analogue and digital media to create drawings and models. (Skill)	4. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Review** students' 2-D and 3-D analog and digital representation skills.
5. **Represent** human scale and proportion in design drawings. (Skill)	5. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D).
6. **Demonstrate** understanding of computer hardware	6. **Review** students' drawing and modeling work

and software as used in architectural practice (Knowledge)	where students must exhibit their visual representation skills (2-D and 3-D).
7. **Incorporate** color and materials into designs and presentations. (Skill)	**7.** **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D).
8. **Demonstrate** knowledge of graphic conventions and methods of organization (Knowledge and Skill)	8. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D).

Assessment: To evaluate the students' achievement of the learning objectives, the professor will do the following:

1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups.
2. **Assess** the students' use of professional vocabulary during oral presentations.
3. **Review** students' written descriptions of design work and feedback.
4. **Review** students' selection of drawing techniques. (Lo: 1)
5. **Observe** students' progression from simple to complex thinking as shown in sketches and completed projects. (Los: 1, 4, 7)
6. **Observe** students' use and manipulation of computer hardware and software. (Los: 2, 3, 6, 8)
7. **Inspect** students' digital files for use/application of professional standards. (Lo: 3)
8. **Inspect** students' portfolios for quality of documentation and editing as well as organization. (Los: 3, 6)
9. **Review** student digital files for use/application of professional standards. (Lo: 3)
10. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D). (Los: 3, 4, 5, 6, 7, 8, 9, 10, 11)

Grading:A review of students' work will occur at the middle and end of the semester.

Project 01: Bridging Surfaces	20%
Project 02: The Vertical Stage	30%
Project 03: The Connecting Threshold	30%
Class Participation / Attendance	10%
Process Book	5%
Sketch assignments	5%

Sketch Assignments: Throughout the semester students will complete multiple sketches relating to each design project. The sketches will document site conditions, materials, and ideas.

File Naming: All digital files must be submitted adhering to the following format:
Course number_Professor initials_semester/year_Project Name_Student Name(image number)
For example: 1210_KS_SP16_Project Name_Student Name(01)

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

Sample Course Outline:

Week 1
STUDIO Course Introduction
ISSUE: PROJECT 01_Bridging surfaces
P01 Assignment 01: Site documentation through photography.
Generate a P01 Assignment 02: concept collage and line drawing
VISUAL STUDIES
Assignment 01: Origami Folded surface – analysis and generation of physical folded models.
Portfolio: generate initial template (this will be an ongoing project throughout the semester)

Week 2
STUDIO P01 Assignment 02: 3D abstract study models using linear, planar and volumetric language (Based on the 2D collage)
VISUAL STUDIES
Assignment 02: Digitizing Folded surfaces model. Building and cleaning model geometry in Rhino

Week 3
STUDIO P01 Assignment 03: Series of iterations of the bridge design proposal (translation of abstract design language to architectural proposal)
VISUAL STUDIES
Assignment 03: Digital Iterations Folded model

Week 4
STUDIO P01 Assignment 04: Final model construction
P01 Assignment 05: Orthographic projections of the final proposal
VISUAL STUDIES
Assignment 04a: Apertures and extracting geometry from surfaces
Assignment 04b: Creating composite drawings Rhino + Illustrator

Week 5
STUDIO P01 Assignment 04 cont.: Final model construction
P01 Assignment 05 cont.: Orthographic projections
P01 Assignment 06: Presentation board
VISUAL STUDIES
Assignment 05: Extracting planar geometry for laser cutting + laser cutting

Week 6
STUDIO **DUE: PROJECT 01 – FINAL REVIEW**
DUE: PROJECT 01 ARCHIVE
ISSUE: PROJECT 02_Vertical stage
VISUAL STUDIES
Assignment 06: PORTFOLIO draft 01 submittal

Week 7
STUDIO P02 Assignment 01: Performance Analysis diagram
P02 Assignment 02: Site Analysis (in conjunction with VSII)
VISUAL STUDIES
Assignment 07a**:** Site Analysis: Diagramming with Rhino, Illustrator and Photoshop

Week 8
STUDIO P02 Assignment 02 cont.: Site Analysis (in conjunction with VSII)
P02 Assignment 03: Study models: generation of design language and concept development
VISUAL STUDIES
Assignment 07b: Workshop Refining Diagrams and presentation

layouts

Week 9 STUDIO P02 Assignment 04: Model: vertical stage design development
P02 Assignment 05: Digital model design proposal (in conjunction with VSII)
VISUAL STUDIES
Assignment 08**:** Digital model (Rhino): Different strategies for Modeling in Rhino.

Week 10 STUDIO P02 Assignment 04 cont.: Final model: Vertical Stage design
P02 Assignment 05: Digital model (in conjunction with VSII)
VISUAL STUDIES
Assignment 09: Using the modeling techniques introduced last week create a digital model of your current design proposal. Use the clipping plane tool to study the sectional spatial qualities of the space. Print the sectional studies, insert a scale figure and continue to edit the section in sketch form.

Week 11 STUDIO P02 Assignment 06: Orthographic projections (in conjunction with VSII)
P02 Assignment 07: Diagrams of design strategy and development (in conjunction with VSII)
P02 Assignment 08: Final presentation board(s)
VISUAL STUDIES
Assignment 10: Presentation drawings: Adding surface thickness, extracting, cleaning and articulating plans, elevations, sections and Section/perspectives from digital models

Week 12 STUDIO
DAY 1 **DUE: PROJECT 02 – FINAL REVIEW**
DAY 2 ISSUE: PROJECT 03_Thresholds: DUMBO welcome center
P03 Assignment 01: Program analysis
P03 Assignment 02: Study models welcome center proposal
VISUAL STUDIES
Assignment 11: Storytelling through diagramming**:** Generate a sequence diagram to help describe the design development of Project 02

Week 13 STUDIO P03 Assignment 02 cont.: Models design development welcome center
P03 Assignment 03: Digital Model
P03 Assignment 04: Diagrammatic sequence
VISUAL STUDIES
Assignment 12: Rendered sections: Using a section from project 02 created a composite drawing that activates the space

Week 14 STUDIO P03 Assignment 02 cont.: Final Models welcome center
P03 Assignment 04: Diagrammatic sequence
P03 Assignment 04: Drawings: rendered Elevation, plan and sections (in conjunction with VSII)
VISUAL STUDIES

		Assignment 13: Develop digital models and presentation drawings for Project 03 in ARCH 1210
Week 15	DAY 1	P03 Assignment 03: Final model: Vertical Stage design
	DAY 2	**DUE: PROJECT 03 – FINAL REVIEW**
	VISUAL STUDIES	
		DUE: PORTFOLIO

Department of Architectural Technology

ARCH 1221 **HISTORY OF WORLD ARCHITECTURE to 1900**

3 classroom hours, 0 lab/studio hours, 3 credits

Course Description: An historical survey of architecture from early civilizations to the start of the Industrial Revolution. Architecture is examined as an expression of the culture and life of a society. Class sessions study architecture from around the world within its social, temporal, and spatial contexts. While the history of Western architecture is covered from ancient Egypt to the Enlightenment, a special focus is directed to the architectures of the Far East, South Asia, Africa, pre-Columbian Latin America, the Islamic World, and elsewhere to provide a comprehensive overview of the richness and diversity of architecture as a cultural artifact.

Pre or corequisite: ENG 1101

Suggested Text: Understanding Architecture: Its Elements, History and Meaning (3rd ed) by Leland M. Roth and Amanda C. Roth Clark, Colorado: Westview Press, 2014.

Suggested Reference: Varies depending upon the subject of the course

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two latenesses are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor. More than 10 minutes is considered late.

Course requirements: Students will be required to keep up with weekly reading assignments and be prepared to discuss assigned readings in class. This course is writing intensive and will require students to write about material discussed in class, documented in the readings, and experienced in the city. OpenLab will be actively used by all students to post writing assignments and reflections as required. OpenLab provides a collaborative environment where students can post and share their understandings and experiences.

Grading:		
	Homework /Writing Assignments	60%
	Quizzes	10%
	Examinations	20%
	Class Participation	10%

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**

Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. Develop a vocabulary of architectural terms and use it to describe buildings and descriptive writing skills.	1. **Assess** students' use of professional vocabulary in the written work and during class discussions.
2. **Communicate** ideas & information both verbally and through writing.	**2. Assess** student research and critical thinking abilities by monitoring weekly progress of written assignments and readings.
3. **Research and evaluate** information from diverse sources.	**3. Assess** the students' ability to integrate and communicate through student presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Comprehend** architecture as an artistic endeavor and as a response to human needs. (Knowledge)	**1. Assess** the quality of critical thinking and contributions to discussions during oral presentations.
2. **Understand** architecture in the context of its geopolitical, economic, social, cultural and technological trends. (Knowledge)	2. **Assess** students' understanding of the development of architecture from pre-history through to the 19th century in their written and sketching assignments
3. **Identify** paradigm plans and elevations of significant buildings. (Knowledge)	**3. Assess** the students' ability to synthesize and apply what is learned from exams and written assignments.
4. Communicate effectively through presentations to the class using written oral and graphic media. (Skill)	4. **Assess** the students' ability to recall and recite the key terms and material of the readings and lectures through class quizzes, midterm and final exam.
5. Communicate effectively using a vocabulary developed throughout the course. (Skill)	**5. Assess** the students' use of professional vocabulary during quizzes, oral presentations and written assignments.

Weekly Course Outline

While the specific details of each section will differ all courses will follow this basic outline:

Week 1: **Early Civilizations – Neolithic to Babylon**

Lecture: Examination of structures from the Neolithic period through the lost civilization of Babylon, including Mesopotamia, Samaria, and Assyria. Topics covered include formal concepts such as megaliths, ziggurats, vaults, and constructional methods such as post-and-beam, trabeation, and cantilever. Building artifacts are studied in their historical and cultural contexts.
Reading Assignment: Read chapters 1, 2, and 4 in Roth: Commodity, Firmness, and Delight in Architecture

Week 2: **Egypt c. 3000 BCE – 30 BCE**

Lecture: The "Golden Age" of Egypt is discussed, beginning with the emergence of pyramids from the more primitive burial chambers in mastabas. Students will learn how articulated columns evolved in temple design, and see how principles of symmetry and scale shaped architectural expression.
Class Discussion: Week 1 reading
Writing Assignment: Visit Grand Central Terminal: Write a 400- 500-word essay on how this building conforms to Commodity, Firmness, and Delight
Reading Assignment: Chapter 10 in Roth: Egyptian architecture

Week 3: **Ancient Greece**

Lecture: Beginning with Minoan culture represented by the palace of Knossos and its evolution in Mycenae, this week looks at the great Greek temples, agoras, and domestic constructions. Students will study in further detail the classical orders introduced in ARCH1101.
Class Discussion: Week 2 reading: Egyptian architecture
Writing Assignment: Visit Federal Hall on Wall Street: Discuss how it conforms to the principles of Greek temple architecture
Reading Assignment: Chapter 11: Greek architecture

Week 4: **Ancient Rome**

Lecture: Evolving from the confluence of Etruscan and Greek influences, Roman builders produced iconic buildings and cities, introducing long-span brick arches, complex barrel-vaulting and dome techniques which made possible the aqueducts, baths, and the Pantheon.
Class Discussion: Week 3 lecture and reading: Greek Architecture
Reading Assignment: Chapter 12 in Roth: Roman Architecture
Study assignment: Prepare for quiz on Egypt, Greece, and Rome

Week 5: **Early Christian and Eastern Europe (Byzantine) 450 CE – 800 CE**

Lecture: Topics include the division of Roman Empire into East and West; dual development of the dome on squinches and pendentives; basilica plan versus centralized plan; the cities of Rome, Ravenna, and Constantinople; and buildings San Vitale, Hagia Sophia and St. Mark's in Venice.
Quiz: Egypt, Greece, and Rome
Reading assignment: Chapter 13 in Roth: Early Christian and Byzantine
Writing assignment: Find a building in your neighborhood inspired by classical principles. Photograph it and write a 300-word essay using the terms we have discussed. Prepare a three- to five-minute presentation of your building.

Week 6: **India and Southeast Asia 300 BCE – 1200 CE**

Lecture: The rise of Buddhist and Hindu cultures found expression in elaborate temple cities such as Madurai rich in religious symbolism. A look at the remains of the lost Khmer cities of Angkor Vat and Angkor Thom reveals the sophisticated formal patterns of ornament unique to these cultures.
Student presentations: Week 5 assignment
Reading assignment: TBD on India and Southwest Asia

Week 7: **China and Japan 200 CE -1200 CE**

Lecture: China's architectural heritage dates back to the Han dynasty and the Great Wall. Under the Sui and Tang dynasties city-building flourished (200-900 CE), and during the Song through Ming dynasties (800-1600), the wood-framed temples and palaces associated with traditional architecture were developed. As with China, traditional Japanese architecture had its origins in Buddhism and its unique forms evolved from continental models brought over by Tang builders. Similarities and differences in formal and constructional approaches between the two cultures are carefully examined.
Reading assignment: TBD on China and Japan
Writing assignment: Perhaps something from the Metropolitan Museum

Week 8: **Persia and the Middle East 600 CE-1200 CE**

Lecture: This week considers architecture of the Arab world of its great period following the Hegira of Muhammed. Monuments studied include the Dome of the Rock, the Great Mosques of Sumarra, Cordoba, and the Alhambra. Persian architecture is explored in the Royal Palace of Isfahan and the Palace of the Shah. The elaborate patterns within the tile work will be analyzed as well as the structural dynamics of the onion dome and the signature articulated pendentives.
Class Discussion: Week 7 lecture and reading
Study assignment: Study for mid-term

Week 9: **Central Europe - Spain, France, and Italy (Romanesque) 800 CE-1100 CE**

Midterm; Weeks 1-8
Lecture: Topics include the fall of the Roman Empire; rise of the church and the monasteries; elements of the church cruciform plan of the Christian churches and ribbed vaulting. Comparison of variations during the Romanesque period will be made.
Reading assignment: Roth, Chapter 14

Week 10: **Northern Europe -France, England and Germany (Gothic) 1000 CE – 1400 CE**

Lecture: The evolution of the cathedral plan, types of vaulting, the pointed arch, flying buttresses, and stained glass characterize this period particular to northern Europe. These classes will carefully consider the structural principles necessary for its implementation in skeleton stone framing.
Class discussion: Week 9 lecture and reading
Writing assignment: Romanesque and Gothic [see example]
Reading Assignment: Roth, chapter 15

Week 11: **Central and South America, and Africa 800 CE-1500 CE**

The great civilizations of the Aztec, Mayan, and Incas are studied in the context of their traditions and constructional techniques. Sub-Saharan culture and its forms of habitation are explored.
Class discussion: Week 10 lecture and reading
Writing assignment: TBD
Reading Assignment: TBD on Central and South America and Africa

Week 12: **Central Italy – Renaissance and Mannerism 1400 CE- 1600 CE**

Lecture: These classes look at the nature of this rebirth in the "rediscovery" of Classical Rome. Beginning with the early Renaissance in Florence and following through to the High Renaissance in

Rome, buildings considered are the Florence Cathedral's Dome and Brunelleschi's solution. Works by Brunelleschi, Alberti, Bramante, Michelangelo, Palladio, Romano and others are analyzed.
Class discussion: Week 11 lecture and reading
Writing assignment: research the Laurentian Library stair hall by Michelangelo. Write a 400- to 500-word essay on its Renaissance and Mannerist features.
Reading Assignment: Roth, chapter 16

Week 13: **Rome – Baroque 1600 CE- 1700 CE**

Lecture: Although Baroque found expression throughout Europe, it was in Rome where it flourished during the counter-Reformation. These classes look at the work of Bernini, Borromini, Crotona, and Raguzzini. Building comparisons will emphasize the transition from the Renaissance to the Baroque. Furthermore, the architecture of Vignola, Moderno, and Guarini (in Torino) among others will be explored.
Class discussion: Week 12 lecture, reading, and homework
Writing assignment: TBD
Reading Assignment: Roth, chapter 17

Week 14: **Germany and France – Rococo and Neo-Classical 1700 CE- 1850 CE**

This week explores two different approaches to architecture: the fluid expression of German Rococo that evolved from Italian Baroque and found in the pilgrimage churches of central and southern Germany, and the austerity of French neo-classicism, an outgrowth of the French Revolution.
Class discussion: Week 13 lecture and reading
Study assignment: Study for Final Exam (second half of the semester)
Reading Assignment: Roth, chapter 18

Week 15: **England and Colonial America 1600 CE – 1850 CE**

Lecture: Colonial architecture in the northern colonies was greatly influenced by English architects of Inigo Jones, John Soane, and Christopher Wren. These classes explore Palladio's influence on the English practitioners, and in turn locate their influence on colonial vernacular, and on the practices of Benjamin Latrobe, William Strickland, Thomas U. Walter, John Mills, Charles Bulfinch, among others. Case studies will focus on the work of Thomas Jefferson: Monticello, University of Virginia, and the Virginia State House
Final exam

Assignments:

During the course of the semester, ten to twelve one-week writing assignments are given that challenge the students to apply their learning to a building or architectural concept. Initially low-stakes assignments, they become more sophisticated as the students build their critical abilities. Below is a typical assignment.

DEPARTMENT OF ARCHITECTURAL TECHNOLOGY

ARCH 1121 **HISTORY OF ARCHITECTURAL TECHNOLOGY (W)**
2 classroom hours, 2 academic credits

Instructor: **Professor Duddy** mduddy@citytech.cuny.edu

Assignment 7: Romanesque and Gothic

The many periods of architecture that we are studying this semester occurred long before the European settlers arrived in America. Nevertheless, many of these same styles can be found throughout the American continents, although they are adaptations of the originals in Europe. We call these adaptations "revivals" or "neo," meaning "new" or "recent" [Greek *neos*], and they are usually interpretations of the older versions, and not copies. Hence: Neo-Classical, Neo-Romanesque, Neo-Gothic, etc.

For this assignment you will compare two examples of Neo- styles: the neo-Gothic Saint Ann's Church in Brooklyn Heights with the Neo-Romanesque Brooklyn Bankruptcy Court portion of the Central Post Office. What you should discuss includes but is not limited to the following:

- What is the massing of each building? Is it symmetrical; what are the proportions; what is the rhythm, etc.?
- What kind of vertical element does it have? Where is that element located? Why is located where it is?
- What shape are the windows?
- What kind of columns does it have?
- What are the building made of? What kind of texture do the parts of the building have?

Saint Ann's Church

Brooklyn Bankruptcy Co

This assignment will be done in two parts. This week you will visit the buildings and look closely at their features. You will notice that they both have tower elements but that they are different. How are they similar and how are they different? Take pictures of them and note in bullet points how they compare. For next class you will prepare a slide presentation showing at least three different characteristics you want to contrast and compare. Be sure to use the terms we have been discussing in class. We will go through the presentations and discuss everyone's findings. For the following class you will write a 500 word (minimum) paper that compares and contrasts the two styles of the buildings.

Course Activities:

Course format will include a combination of any of the following activities:

- **Field Trips / High Impact Learning Practices:**
  Field trips will look to visit existing buildings and construction sites, tour newly constructed buildings and urban spaces or visit institutions, including but not limited to museums, churches, or other colleges with discussions led by either the instructor or on-site experts in the field or the subject.

- **Lectures:**
  Lectures will be given by a qualified instructor and if warranted invited guest lecturers or experts in the field or subject.

- **Activities:**
  Students will participate in activities that provide them with the opportunity to apply what is learned in a given subject.

- **Research Activities:**
  Students will be given directed readings and be required to correlate their readings with the lab exercises. Supplemental research will be encouraged to promote a greater analytical and critical understanding.

- **Presentations:**
  Students will participate in written, oral and graphic presentation of course subjects and issues identified through their reading, writing, and lab work.

Department of Architectural Technology

ARCH 2305 BUILDING TECHNOLOGY II

1 classroom hours, 4 lab/studio hours, 3 credits

Course Description: A continuation of the study of the materials of construction as well as the theory and practice of building technology. Students investigate the assembly of building components and methods of construction while developing proficiency in both analog and digital drawing and building modeling techniques.

Course context: This is the second course in the Building Technology sequence required for both the AAS and the BTech degrees offered by the Department of Architectural Technology. Each course in this sequence is a pre-requisite for the following course.

Prerequisites: MAT 1275 or higher, ARCH 1205 Building Technology I with a grade of C or higher

Required Texts:
Allen, Edward. *Fundamentals of Building Construction: Materials and Methods, 6th Edition*. John Wiley and Sons, 2014.
Ching, Francis. *Building Construction Illustrated*. John Wiley and Sons, 2008.

Recommended Texts:
Ramsey, Charles George, Harold Reeve Sleeper, and Bruce Bassler. *Architectural Graphic Standards: Student Edition (Ramsey/Sleeper Architectural Graphic Standards Series)*. John Wiley and Sons, 2008.
Ching, Francis. *Architectural Graphics, 5th Edition.* John Wiley and Sons, 2009.

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: This course will combine weekly lectures focused on particular materials and methods of construction and studio lab time to acquire hand sketching and digital drafting and modeling skills while developing a series of case drawing and modeling investigations of the materials and assemblies discussed in the lectures. There will be one or more research assignments as well as several quizzes based on key terms and concepts discussed in the class and in the assigned readings. There will be a comprehensive final exam. A portfolio will be developed to document the studio lab work as the semester progresses. Field trips will offer first hand on-site investigation of the materials and methods covered in the course.

Grading: Final grade will be determined according to the following grade weighting:

65% Studio Lab Assignments
10% Quizzes
20% Final Exam
5% Class Participation

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Manipulate and apply** geometric, proportional and scale systems.	1. **Review students' technical drawings assignments** where students must exhibit their understanding through accuracy, correct use of line weight and scale, and annotations.
2. Develop and **apply** professional vocabulary of architectural terminology.	2. **Assess** the students' use of professional vocabulary during oral presentations.
3. Recall and recite the key terms, properties, and fabrication techniques of the materials reviewed in the lectures and readings.	3. **Assess the students' ability to recall and recite** the key terms and concepts during textbook presentations and through review of textbook notes, and sketchbook and technical drawing annotations.
4. Generate clear and concise talking points to guide oral presentations of lab assignment reviews.	4. **Assess** the students' use of professional vocabulary and etiquette during discussions, studio work, and oral presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Understand** the relationship of technology to tectonics and architectural character. (Knowledge)	1. **Review** assignments focused on the analysis of assemblies and details and the relationship of technology to tectonics, human scale, and architectural character.
2. **Define and compare** the environmental implications of specific materials and types of construction including embodied energy, sourcing, and the processing of materials. (Knowledge)	2. **Test** the students' ability to recall and recite the key terms and material of the readings and lectures through weekly quizzes and a final exam.
3. **Analyze** assemblies and details; demonstrate an understanding of fundamental construction types both by detailed research and visual observation. (Skill)	3. **Review** assignments focused on the analysis of assemblies and details and the relationship of technology to tectonics, human scale, and architectural character.
4. **Develop** analog and digital models of construction assemblies. (Skill)	4. **Review** the quality and accuracy of the students' submitted analogue and digital models of construction assemblies.
5. **Sketch and draft** details in orthographic and 3 dimensional views in analogue and digital media. (Skill)	5. **Review** students' drawing and digital modeling work where students must exhibit their visual representation skills (2-D and 3-D).
6. **Develop** a coordinated drawing set for the given	6. **Inspect** student submissions for quality of drafting

building design(s) including plan diagrams, sections, and details of structure that illustrates and identifies the materials and construction types. (Skill)	including use of line weights, lettering, and proper use of scale and **Confirm** the proper coordination of the students' submitted drawing sets.
7. **Demonstrate knowledge** of building codes, professional construction drawing standards for composition, title blocks, and annotation. (Skill)	7. **Inspect** student submissions for code compliance, quality of drafting including use of line weights, lettering, and proper use of scale.

Sample Course Outline:

CLASS MEETINGS 1+2
Lecture: Course Introduction
Lab: Review of Lab Required Equipment and Protocols for Presentation: Architectural Drawing + Modeling: analog and digital tools and techniques. SketchUp, AutoCAD and BIM Software (current industry standard is Revit): Introduction to AutoCAD Interface, Terminology, and Key Commands. Introduction to Drawing Assignment A: Structural Grids (2-D digital).
Reading: Allen, Wood, Chapter 3, pp. 85-129

CLASS MEETINGS 3+4:
Lecture: Making Buildings: Materials and Systems: Introduction to the materials to be discussed throughout the semester. Discussion on tectonics, sustainability, and economics as context for the work of the architect. Introduction to wood construction. Discussion on nature of materials + selecting construction systems, inherent properties including fabrication structural behavior, and building systems.
Lab: AutoCAD workshop
Homework: AutoCAD exercise
Reading: AutoCAD tutorial

CLASS MEETINGS 5+6:
Lab: AutoCAD workshop
Homework: AutoCAD exercise
Reading: Allen, Wood, Chapter 3, pp. 85-129

CLASS MEETINGS 7+8:
Lecture: Wood: Characteristics, structure, classification of trees and properties, softwoods and hardwoods, limitations, manufacture of lumber, grading of lumber, plywood, glue laminated lumber, composite boards, wood joining, types of wood construction.
Review: Assignment A
Lab: Introduction to Case Study Building #1. Review of general planning of case study building. Introduction to Drawing Assignment B: Case Study Floor Plan (2-D digital- AutoCAD.)
Homework: Drawing Assignment B
Reading: Allen, Wood Light Frame Construction, Chapter 5, pp. 161-197

CLASS MEETINGS 9+10:
Lecture: Wood Light Frame Construction Part I: history, platform frame, and foundations for light frame structures, building the frame
Lab: Pin Up: Drawing Assignments A (complete) and B (progress). Continue Introduction to AutoCAD commands and techniques to aid execution of Drawing Assignment B.
Homework: Complete Drawing Assignment B
Reading: Allen, Wood Light Frame Construction, Chapter 5, pp. 197-220

CLASS MEETINGS 11+12:
Lecture: Wood Light Frame Construction Part II: building the frame, roofing, exterior walls and finishes.
Lab: Structural Model: Introduction to digital modeling in SketchUp and AutoCAD. Introduction to Drawing Assignment C: Structural Model for Case Study Building #1 (3-D digital – SketchUp or REVIT)
Homework: Drawing Assignment C

Reading: Allen, Foundations, Chapter 2, pp. 38-55, 71-83

CLASS MEETINGS 13+14:
Lecture: Site Work and Shallow Foundations: Overview of subsoil exploration, test borings. Review type of soils, frost line, and water table. Discussion of excavation and shoring, shallow foundation systems, waterproofing and drainage.
Lab: Continue Assignment C
Homework: Drawing Assignment C
Reading: Allen, Heavy Timber Frame Construction, Chapter 4, pp. 135-160

CLASS MEETINGS 15+16:
Lecture: Heavy Timber Frame Construction: Fire-resistance construction, lateral bracing, longer spans.
Lab: Pin Up: Drawing Assignment C, Introduce Assignment D: Structural Analysis: Studio Project
Homework: Assignment D
Reading: Ching, Building Construction Illustrated, Chapter 9, pp. 9.02-9.13

CLASS MEETINGS 17+18:
Lecture: Designing Stairs: code compliance, terminology, and calculation techniques, drawing conventions
Lab: Assignment D development
Homework: Assignment D
Reading: Ching, Building Construction Illustrated, Chapter 7, pp. 7.02-7.50

CLASS MEETINGS 19+20:
Lecture: Exterior Envelop: moisture & thermal protection including roofing, wall flashing, masonry veneer, siding, thermal insulation, moisture control, ventilation
Lab: Pin Up: Assignment D. Introduce Assignment E: Structural Model: Studio Project
Homework: Assignment E
Reading: Allen, Windows and Doors Chapter 18, pp. 747-781

CLASS MEETINGS 21+22:
Lecture: Windows and Doors: types of windows, window frames, glazing, installing windows, doors types, resistance to wind and rain, thermal performance, impact resistance.
Lab: Assignment E development
Homework: Assignment E

CLASS MEETINGS 23+24:
Lab: Pin Up: Assignment E, Introduce Assignment F: Exterior Envelope
Homework: Assignment F

CLASS MEETINGS 25+26:
Lab: Assignment F
Homework: Assignment F

CLASS MEETINGS 27+28:
Lab: Assignment F
Homework: Assignment F

CLASS MEETINGS 29+30:
Final Review: Assignments D, E, and F + **Final Exam**

Department of Architectural Technology

ARCH 2310 STUDIO III

1 classroom hour, 8 lab hours, 5 credits

Course Description: An exploration of abstract architectural design theory in the expression of three-dimensional space. Students design a small wood-frame building incorporating a building program and elements of site, enclosure, structure, materials, and technology. The structural design of their projects are analyzed and developed in coordination with the building technology sequence. Design concepts and vocabulary are introduced and strengthened through design projects.

Course context: The first course of the integrated studio sequence. It is a required course and a prerequisite for subsequent studio courses. *Students are expected to demonstrate the knowledge acquired in ARCH 1205 and ARCH 1210 in this course.*

Prerequisites: ARCH 1205 and 1210 both with a grade of C or higher

Pre- or corequisite: ARCH 2350

Suggested Text: Ching, Francis X. *Form Space & Order*. John Wiley and Sons, 2007.

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two latenesses are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: This course is a design studio. There will be lectures, a combination of one on one desk critiques, small group reviews and presentations. Students will be responsible for working in class and for completing their work outside of class hours. There will be three projects during the semester.

Grading:
Precedent Study: 25%
Design Investigation and Solution: 60%
Presentation Skills: 15%

A final grade of C or higher is required in this course to use it as a prerequisite for subsequent courses.

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model.	1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Inspect** students' portfolios for quality of documentation and editing as well as organization.
2. **Communicate** ideas and information both verbally and through writing.	2. **Assess** the students' use of professional vocabulary during oral presentations and **Review** students' written descriptions of design work and feedback.
3. **Research** and **practice** information literacy skills by researching precedents.	3. **Assess** citations of research and review evidence of students' evaluation of sources.
4. **Apply** quantitative analysis to design.	4. **Review** students' accuracy with applying quantitative information to a design scheme.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Understand** the impact horizontal and vertical circulation has on the perception of architectural space and **apply** it to design. (Knowledge)	1. **Review** design projects to assess students' ability to incorporate circulation paths and plan organizations into a design
2. **Demonstrate** an ability to design based on a concept. (Skill)	2. **Review** design projects to assess students' ability to incorporate a concept into their design process.
3. **Develop** parti concepts and diagrams into schematic level drawings. (Skill)	3. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups.
4. **Understand** the difference between solid and void and positive and negative spaces and **apply** it in 2D and 3D designs. (Knowledge)	4. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups.
5. **Produce** orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)	5. **Review** students' drawing and digital modeling work where students must exhibit their visual representation skills (2-D and 3-D).
6. **Utilize** analogue and digital media to create drawings and models. (Skill)	6. **Review** students' drawing and digital modeling work where students must exhibit their visual representation skills (2-D and 3-D).
7. Synthesize site circulation, zoning, urban context, and views to design. (Skill)	7. **Review** students' ability to synthesize circulation, zoning, urban context, and views into a design.

8. **Synthesize** construction types, hierarchy, and light to building design. (Skill)	8. **Review** students' ability to synthesize construction types, hierarchy, and light into building design.

Extent and Duration of projects

Project 1

- 4 Weeks
- Precedent Study

Project 2

- 11 Weeks
- Design of a Small Wood-Frame Building

WEEK 1-4: **PROJECT 01 PRECEDENT STUDY**

DESCRIPTION The objective of this project is for students to understand how to apply a design concept to a built form, represent a design through drawings such as diagrams, plans, sections, and elevations, analyze existing works of architecture, and increase their design vocabulary by the comprehensive study of a building by a well-known architect.

SCHEDULE

01 **Introduction to Project 01**
Class: Course Introduction
Discussion: Precedent Studies

02 **Research Precedents to Study**
Class: Presentations on choice of case studies
Discussion: Design Concepts

03 **Initial Precedent Analysis**
Class: Presentations on initial research of case study
Discussion: Analyzing Architecture

04 **Precedent Analysis Development**
Class: Individual Desk Critiques
Discussion: Orthographic Drawings

05 **Orthographic Drawings**
Class: Individual Desk Critiques
Discussion: 3D Modeling

06 **3D Modeling**
Class: Individual Desk Critiques
Discussion: Diagramming

07 **Diagramming**
Class: Individual Desk Critiques
Discussion: Final Presentations

08 **Precedent Presentations**
Class: Juried Presentation of Precedent Studies

WEEK 5-15: **PROJECT 02 SMALL WOOD-FRAME BUILDING**

DESCRIPTION The objective of this project is for students to develop and apply a design intention to a built structure with a small program. Students will be expected to incorporate a program and elements of site, enclosure, structure, and materials. Students must develop a logic between the interior and exterior of the project. Structure, site and sustainable design principles will be addressed in conjunction with the building technology studio and site planning class.

SCHEDULE

09 **Introduction to Project 02**

Class: Project Description
Discussion: Wood-Frame Buildings

10 **Design Narratives**
Class: Presentations of Design Narratives
Discussion: Physical Design Iterations

11 **Review Physical Models and Sketches**
Class: Individual Desk Critiques
Discussion: Digital Design Iterations

12 **Review Digital Models**
Class: Individual Desk Critiques
Discussion: Digital Design Iterations

13 **3D Printed Models**
Class: Presentations of 3D Printed Massing Models
Discussion: Rhino Models

14 **Design Development**
Class: Individual Desk Critiques

15 **Design Development**
Class: Individual Desk Critiques

16 **Site Planning**
Class: Individual Desk Critiques
Discussion: Site Planning

17 **Site Planning**
Class: Individual Desk Critiques by Site Planning Instructor
Discussion: Site Planning

18 **Site Planning**
Class: Presentations of Site Planning Concepts

19 **Structure**
Class: Individual Desk Critiques
Discussion: Structure

20 **Structure**
Class: Individual Desk Critiques by Structures Instructor
Discussion: Structure

21	**Structure** Class: Presentations of Structural Concepts
22	**Design Development** Class: Individual Desk Critiques
23	**Design Development** Class: Individual Desk Critiques Discussion: Facades
24	**Design Development** Class: Individual Desk Critiques Discussion: Diagramming
25	**Orthographic Drawings** Class: Individual Desk Critiques Discussion: Orthographic Drawings
26	**Orthographic Drawings** Class: Individual Desk Critiques Discussion: Orthographic Drawings
27	**Orthographic Drawings** Class: Presentations of Orthographic Drawings
28	**Architectural Representation** Class: Individual Desk Critiques Discussion: Renderings
29	**Final Presentations** Class: Juried Presentation of Final Project
30	**Portfolio Presentations**

Department of Architectural Technology

ARCH 2350 SITE PLANNING & SUSTAINABILITY

1 classroom hour, 4 lab hours, 3 credits

Course Description: Introduction to the fundamentals of site planning principles with a strong foundation in ecological design and sustainable site development. This course connects the built and natural worlds, provides practice in topographical and GIS maps and will develop graphic and model presentation skills.

Prerequisites: ARCH 1205 with a grade of C or higher.

Pre- or corequisites: ARCH 1210 with a grade of C or higher if it is a prerequisite.

Required Materials: Architectural and Engineering Scales, Calculator, Colored Pencils, Notebook

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two latenesses (more than 10 minutes) are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Recommended Texts

Site Analysis: Linking Program and Concept in Land Planning and Design, James A. Lagro, John Wiley and Sons, 2001.
Time Saver Standards for Site Planning, Joseph DeChiara and Lee E. Koppelman; McGraw Hill, latest edition.
Time Saver Standards for Landscape Architecture, Charles W. Harris and Nicholas T. Dines; McGraw Hill, latest edition.
Site Planning Standards; Joseph DeChiara & Lee E. Koppelman, McGraw Hill, latest edition.

Grading: Every worksheet, quiz and project will be graded and the student's progress will be evaluated and monitored. Professionalism and punctuality in meeting deadlines will be stressed. Copied, borrowed or 'shared' work will be considered cheating, and will result in a grade of F for the project and possibly a final grade of F.

Final grades will be determined as follows:

30% Homework
30% Quizzes
40% Team Project

Academic Integrity:

Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Communicate** ideas and information both verbally and through writing.	1. **Review** the group project to assess the students' ability to work as a team to create an organized presentation of a design that responds to basic site planning principles and present it to the class for discussion and review.
2. **Work** effectively as a team to execute projects.	2. **Review** the group project to assess the students' ability to work as a team to create an organized presentation of a design that responds to basic site planning principles and present it to the class for discussion and review.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Explain** the different factors to be considered to produce a field study for a given site. (Knowledge)	1. **Review** quizzes, homework, and the group project to assess the students' ability to identify the different factors of a site that are important in evaluating its best use.
2. **Grade** a site using cut and fill to alter existing contours. (Skill)	2. **Review** quizzes, homework, and the group project to assess the students' ability to re-grade a site to accommodate a new use and to properly direct the flow of run-off while minimizing the effects of erosion and the disruption of existing topography and vegetation.
3. **Apply** zoning concepts and restrictions including OSR and FAR. (Knowledge)	3. **Review** quizzes, homework, and the group project to assess the students' ability to complete zoning study calculations and identify setback restrictions of a site to determine the buildable volume options of a proposed building.
4. **Understand** how climate, topography, hydrology, geology and views affect site and building design. (Knowledge)	4. **Review** quizzes, homework, and the group project to assess the students' ability to produce a set of inventory and analysis drawings based on a site visit.
5. Effectively integrate site planning into the architectural design process. (Skill)	5. **Review** quizzes, homework, and the group project to assess the students' ability to perform a site inventory and analysis and evaluate these for a specific programmed use, to determine appropriate locations available for a new building.

6. **Explain** how access to the sun and daylight influences site planning and the building envelope. (Knowledge)	6. **Review** quizzes, homework, and the group project to assess the students' ability to perform a site inventory and analysis and evaluate these for a specific programmed use, to determine appropriate locations available for a new building.
7. **Understand** how the fundamentals of ecological design are applied to building sites and create integrated opportunities between buildings and site. (Knowledge)	**7.** **Review** quizzes, homework, and the group project to assess the students' ability to perform a site inventory and analysis and evaluate these for a specific programmed use, to determine appropriate locations available for a new building.
8. **Define** and compare rating systems for evaluating sustainable planning. (Knowledge)	8. **Review** quizzes, homework, and the group project to assess the students' ability to define and compare rating systems for evaluating sustainable planning.

Assignments: Each student is responsible for turning in all assignments on the day the assignment is due even if absent. **Late work will be downgraded.** A student will receive a penalty of 1/3 grade for each class the assignment is late. If the project deserves an A- but was delivered two classes late, the student will receive a B grade. (From A-, to B+, to B.) This penalty will be enforced even if the student is absent from class on the deadline day. Do not stay home from class if your assignment is not complete. Instead, present your questions and difficulties to the instructor so we can all learn.

Quizzes: Quizzes when given will begin promptly at the start of class and will last no more than 15 minutes. A student arriving 10 minutes late to class will only have 5 minutes to complete the quiz. No "make-up" quizzes are available. Do not arrive late!

Course Outline

Week 1: Overview and Introduction to Site Planning & Sustainability

What is Site Planning? What is Ecological Design? Overview of the site planning process, the use of Topography, Climate, Hydrology, Vegetation and Geology and how the fundamentals of ecological design can inform site planning decisions. Site planning is presented as a process that allows us to weave together the built and natural worlds and optimize existing site and natural resources and ecosystem services.

Week 2: Introduction to Mapping and Geographic Information Systems (GIS)

An introduction to the ways we store and display planning information through maps, layers and GIS. Review of accessible databases and application to site design and planning.

Week 3: Climate – Macroclimate and Microclimate

Discussion of our atmosphere and sun, the influence of land forms and water bodies, seasonal change, climate change and the urban heat island. The role of the sun, orientation and seasonal change. Working with the sun path diagram, shadow study calculations, and the effect of building orientation and form. Microclimate factors and the influence of local landforms, buildings and vegetation. Explore how bioclimatic factors can shape building and site decisions and affect human comfort.

Week 4: Field Trip – Downtown Brooklyn

Site observation & analysis. Meet in our classroom – dress for the weather.

Week 5: Site Ecology – Geology, Soils

Review of geology and its role in shaping buildings and site planning decisions. Soil classification and soil ecology. Discussion of local geology, soil bearing capacity, hydrological characteristics, subsidence, seasonal factors. Review of soil testing including field tests, pits, and borings.

Week 6: Site Ecology – Hydrology
Review of the hydrologic cycle and NYC municipal and waste water systems. Discussion of rainwater as a resource, surface and ground water systems, site drainage, erosion, role of water in supporting plants and site ecological systems. Calculation of site and building water balance through conservation, rainwater capture and water reuse/recycling systems. Review of local strategies, technologies and case studies for sustainable management of site water.

Week 7: Site Ecology – Biology
Introduction to site biology and the role of plants and animals in sustainable urban ecosystems. Discussion of the urban environment and its unique challenges in supporting site flora and fauna. Review of biodiversity, habitat support, ecotypes, green corridors, urban food supply systems, and migratory species. Develop an understanding of plant requirements and the particular challenges of our urban settings, including heat islands, pollution, access to water, roof gardens and vertical gardens.

Week 8: Site Inventory and Analysis
Review of natural and built site assets central to resourceful site design. Tools and conventions for surveying, mapping, notation and visualization. Develop an understanding of neighborhood / district and city / regional resource flows and built infrastructure. Introduce methods of site analysis through overlay mapping and flow and connectivity diagrams. Include role of shadow studies and importance of historical and cultural resources. Discuss qualitative vs. quantitative approaches.

Week 9: Site Circulation
Explore how the flow of people, materials, resources, energy and information shapes site planning, building placements and pathways. Learn the design requirements for successful, coordinated and accessible vehicular and pedestrian circulation systems. Develop a coordinated understanding through mapping exercises.

Week 10: Topography
Overview of topography and how it influences site design. Introduction to the concepts of grading, cut and fill, and application to surface drainage. Exercise in reading topographic maps and constructing models.

Week 11: Grading
Problem solving and in-class grading worksheets. Strategies for reducing earth work and protection of soil ecology and groundwater, minimizing erosion and protecting flora and fauna. Review of Civil Engineering drawing conventions and site planning systems including retaining walls and drainage systems

Week 12: Land Use, Zoning, Maps and Legal Descriptions
Occupancy, Use, Open Space Ratio (OSR), Floor Area Ratio (FAR), setbacks, site coverage, site bulk and zoning maps. Concepts of legal definitions as they relate to site planning. Metes & Bounds description, easements, right-of-ways and other legal constraints. Development of these concepts in NYC including history and recent contextual and PlaNYC sustainability & resiliency initiatives.

Week 13: Mapping and GIS - Applied
Exercises in the application of mapping across all topics including Topography, Circulation, Site vegetation, Hydrology, Geology and Microclimates. Includes topics on coordination and visualization of data.

Week 14: Organizing Presentations
Review of final presentation requirements and techniques for organizing information. Term project team work session.

Week 15: Final Presentations

Department of Architectural Technology

ARCH 2405 BUILDING TECHNOLOGY III

1 classroom hour, 6 lab hours, 4 credits

Course Description: The study of the development of the building systems as they occur during the design development phase of architecture. Working from an existing design solution students transform the design into a workable building solution documented and detailed in a preliminary set of construction documents. Using case study research methods, students analyze factors, such as zoning, building assemblies and systems, codes and government regulations, human ergonomics, and sustainability, which affect building construction and use. Their solutions to these issues are integrated into their final building design solutions. Students create a series of reports and a set of construction drawings using both analog methods (hand sketching and drawing) and digital tools including traditional CAD software and Building Information Modeling techniques in coordination with the building technology sequence.

Course Context: This is the third course in the Building Technology sequence required for both the AAS and the BTech degrees offered by the Department of Architectural Technology. Each course in this sequence is a pre-requisite for the following course.

Prerequisites: ARCH 2305: Building Technology II with a grade of C or higher

Required Texts:

- Class readings on relevant sections will be posted weekly on either Blackboard or the OpenLab website
- Allen, Edward and Joseph Iano. Fundamentals of Building Construction / Materials and Methods. 6th Edition John Wiley and Sons, 2014.
- Ching, Francis. Building Construction Illustrated. John Wiley and Sons, 2008.

Recommended Text:

- Ramsey, Charles George, Harold Reeve Sleeper, and Bruce Bassler. Architectural Graphic Standards: Student Edition (Ramsey/Sleeper Architectural Graphic Standards Series). John Wiley and Sons, 2008.
- James Vandezande, Eddy Krygiel, and Phil Read. Autodesk Revit Architecture 2013 Essentials: Publisher: Sybex; 1 edition (May 1, 2012)

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two lateness are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: Lectures & lab work. Assignments include sketching, a series of reports, class presentation, , quizzes and set of design development level construction drawings. Digital tools learned in prior building technology courses are reinforced and enhanced.

Grading:

60%	Individual Computer Based Drawing Assignments (Comprehensive Drawing Set)
20%	Team Case Studies, Presentations, Research
15%	Individual Studio Lab Assignments & Sketching Assignments
5%	Individual Class Participation

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citing of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion.

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Execute** work through a collaborative process.	1. **Review** the effectiveness of student team organization and their management of the project work by frequent meetings.
2. Generate clear and concise talking points to guide oral presentations of lab assignments.	**2. Assess** the students' use of professional vocabulary during oral presentations.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Understand** the process and requirements of developing a design from a schematic concept into design development drawings. (Knowledge)	1. **Compare** the content and quality of final submission of the design development set to a specific professional standard.
2. **Understand** the advantages and limitations of BIM (building information modeling) as a tool for design development and project delivery. (Knowledge)	2. **Inspect** student submissions for the efficient and effective use of BIM tools.
3. **Apply** knowledge of materials and methods of construction, including sustainable principles, to the development of details and assemblies. (Skill)	3. **Review** the effectiveness of the design and the accuracy of the analysis of the environmental performance of the submitted exterior wall system.
4. **Sketch** and **draft** details in orthographic and 3-D views in analogue and digital media. (Skill)	4. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D) and the quality and accuracy of the students' submitted analogue and digital models of construction assemblies
5. Design and analyze exterior wall system based on environmental performance. (Skill)	5. **Review** the quality and accuracy of the students' submitted analogue and digital models of construction assemblies and the effectiveness of the design and the accuracy of the analysis of the environmental performance of the submitted exterior wall system.

6. **Apply** knowledge of professional construction drawing standards for page composition, title blocks, annotation, and schedules. (Skill)	6. **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D) and **Compare** the content and quality of final submission of the design development set to a specific professional standard.
7. **Develop** a professional quality coordinated, edited, and organized set of design development documents for a given building design using BIM and CAD. (Skill)	7. **Confirm** the proper coordination of the students' submitted drawing sets and **Review** students' drawing and modeling work where students must exhibit their visual representation skills (2-D and 3-D) and **Compare** the content and quality of final submission of the design development set to a specific professional standard.

Term Project / Weekly Assignments: Each student is responsible for turning in an assignment even if absent the day the assignment is given. It is the student's responsibility to have the email address or telephone number of another student in the class, or to speak with the instructor when absent. Late assignments will be *downgraded 1/3 grade for each class date* they are late. If the assignment deserves an **A-**, but was delivered *two classes late*, the student will receive a **B**. (**A- to B+ to B**)

Course Requirements: Students should expect to spend at least 10 hours per week outside of class time preparing assignments by hand and at the computer. The computer lab is open weekdays and on Saturdays and Sundays during the semester. Hours are posted after the first week of classes. Due to our revised curriculum and greater use of computer labs, open lab hours have been greatly reduced. Remember to plan accordingly and *print all assignments the day before your class meets*.

Deadline note: Unless otherwise instructed assignments will be due and must be posted on Blackboard in advance of class meetings at least 12 hours prior to the class's official start time. If class begins 8:30 AM then assignment must be posted by 8:30 PM the night before.

If assignments require printing, you must print before the start of class. You will not be permitted to print during class and any assignment not ready at the start of class will be graded as late. Submission of PDF or original files will not excuse the lateness due to lack of printing. Late assignments are downgraded.

File Naming and Protocols: All file names should include student's name (last then first), assignment number, assignment name, and date. All work must be submitted using the same version of Revit or AutoCAD that is installed in the lab. If you have a newer version configure your "Save_as" settings.

Individual Assignment Examples:
Last_First_##_AssignmentName_MMDDYY.extension
Wright_Frank_01_Grid_092312.pdf or Wright_Frank_01_Grid_092312.rvt
Only files named properly will be accepted. Other formats will be rejected and considered as not submitted.

Group Assignment Examples:
GroupNumber_##_AssignmentName_MMDDYY.extension
Group.01_01_Grid_092312.pdf or Group.01_01_Grid_092312.rvt

GroupMemberNames_##_AssignmentName_MMDDYY.extension or
Wright.Sullivan.Meis.Corbusier_01_Grid_092312.pdf or Group.01_01_Grid_092312.rvt

As the semester progresses you will be required to maintain and hand in a *running archive* of *all* your work, including sketches, group assignments, etc. This archive is the primary source used for grading. At the end of the semester you

will submit a *final* archive. File name for the archive is to include course number, course section, semester, professor's name, project name, drawing title, your name (last then first) and due date.

Examples:
ARCH2330_Section#_Semester_ProfessorsName_Lastname_Firstname_duedate.dwg
ARCH2330_9619_Fall12_Prof.Smith_Trubin_Alex_102212.dwg (due date = mmddyy)

Course Outline

Week	*Class*	Lecture	Lab Activity
1	1	**Introduction & Team Up!** *Syllabus, Project Statement & Teams* *Project Development Process DD to CD*	*Divide into teams, team interviews & team OpenLab website. Class Administration & Requirements.* **Graded In Class Team Interview Presentations**
	2	**Project and Site Selection** *Building Project Analysis* *Site Inventory & Analysis*	*Analyze structure, mechanical systems, circulation, code compliance, façade, construction materials & detailing. Site inventory & Analysis. Oasisnyc.net* **Preliminary Site Plan Due - Review AutoCAD**
2	3	**Team Project Review and Pinup** *In Class Pinup and Student Discussion* *- Building Project Analysis* *- Site Analysis* *Critical Path Planning*	*All day pinup and discussion of site sketches, photographs, inventory and analysis. Building Plans, Sections and Elevations with trace overlays. Identify issues.* **Graded In Class - Team Building Analysis, Site Analysis & Critical Path Presentations**
	4	**Zoning and Building Code Introduction** *Introduction to zoning and building codes* *Drafting zoning diagrams & isometrics*	*Oasisnyc.net, City planning Department, NYC Building Department, NYC Zoning Text, Use Groups, Districts, FAR, zoning envelope, Setbacks, sky exposure, street wall height, etc.* **Graded – Site Plan, Environs Maps & Zoning Map**
3	5	**Site Inventory & Analysis** *Continue development of zoning & analysis of project site – with a focus on site.*	*Team Desk Crits and development of project inventory and analysis. Review of Site Visit Sketches, Q & A for zoning.* **Graded – Zoning Calculations, Setbacks, Isometrics**
	6	**Site & Zoning Development** *Continue development of zoning & analysis of project site – with a focus on zoning.*	*Team Desk Crits and development of project inventory and analysis. Discussion of zoning.* **Graded - Freehand Site Sketches & Details**
4	7	**Building Analysis & Development** *Transition building from design to construction*	*Team Desk Crits and study of project transition from building design to construction documents.* **Graded – Zoning Text Sheet**
		Team Project Presentations Next 2 classes Existing and proposed solutions. Team is to redraw the project in AutoCAD for study and presentation. *Site Selection* Structural Analysis – identify grid, column locations and long spans.	Mechanical Analysis – fresh air intake, vertical & horizontal route of supply and return. RCP Types Building Materials Identification and Selection Building Layout Review – Room Types, Sizes, Shapes & Circulation Issues *Written Program Analysis*
	8	**Team Project Presentations – Day 1** *Team presentations and class discussion* *Presentations must be posted the day before* *Late assignments will be dropped a full grade* *No exceptions!!!*	*Team presentations of proposed solutions for building each project. Each team to write up and post specific recommendations to another team.* **Both project analysis presentations and recommendations to another team will be graded**
5	9	**Team Project Presentations – Day 2** *Presentations must be posted the day before* *Late assignments will be dropped a full grade* *No exceptions!!!*	**Same as previous day for remaining groups**

		Individual Submission Uploaded to Blackboard	**Drawing Set– Site Sketches & Zoning Sheets**
	10	**Scavenger Hunt with Annotation** *Introduction to Revit/BIM*	*Introduction to Revit and the Scavenger Hunt Project. Review of view creation including sections, elevations, perspectives and details. Adding notes, labels, leaders and dimensions.*
6	*11*	**Scavenger Hunt Pinup review & Warmup Project** *Pinup review*	*Pinup Review of Scavenger Hunt. Starting a new Revit file through a one day warmup project.* **Graded - Scavenger Hunt Assignment**
		Building Development Notes	**Work begun in each class must be completed prior to the next class or it will be marked late.**
	12	**Grids & Levels** *Structural grids and floor to floor heights*	*Revit: Begin individual project drawing. Creation of structural grid, levels & building massing.* *Layout of Architectural Plans and Elevations*
7	*13*	**Foundations & Floors** *Building foundation and flooring systems*	*Revit: Creation of foundations, footings and structural walls & floor systems. Creation of basement columns using concrete.*
	14	**Building Structure – Columns Beams and Trusses** *Upper level structural elements*	*Revit: Creation of upper building structure using steel columns, beams and trusses.* *Layout of structural drawings* **Graded – Grids, Levels, Foundations & Floors**
8	*15*	**Walls & Doors – Fire Rating, Egress & Code** *Egress and code requirement for walls and doors*	*Introduction to egress and code requirements for room occupancy, door widths and partition fire ratings. Discussion of ADA door requirements.* *Revit: Drafting of project floor plans*
	16	**Partition Type & Door Detail Development** *Identity & draw partition types* *Room & Door Tag*	*Teams to develop comprehensive list of required wall types (unrated, 1hr, 2hr, 3hr) and specialty walls (shaft and chase walls).* *AutoCAD: Draft partition types and details.* *Revit: Create custom matching wall types, wall tags. Adding room names/numbers, door tags.*
9	*17*	**Team Case Study & Research Presentations** *Case Study & Research presentations*	*Research presentations including ADA Design, Egress and Building Code, Vertical Circulation, Stair Codes & Construction, Structural Systems, Mechanical System Strategies.* **Graded – Individual Partition Types – 5 required** **In class team case study / research presentations.**
	18	**Vertical Systems: Cores, Stairs & Mechanical** *Elevator and stair cores, shafts, bathrooms* *Revit Stair & Elevator Tools*	*Development of elevator and stair cores, location and design of mechanical shafts and plumbing chase, bathroom layouts. Strategies for horizontal mechanical systems, perimeter heating and cooling.* **Assign Stair & Core Study Sheets**
10	*19*	**Roof Drainage plans & details**	*Revit: Creation of roof systems and details. Use of roof tools by footprint, extrusion and face. Developing roof details.* **Graded – Cores & Stair: Plans, Sections, Details**

	20	**Drawing Set Layout and Annotation** *Adding Schedules, Ttileblocks & Perspectives* *Selecting plan details and wall sections.*	*Revit: Scavenger hunt for your project. Layout of sheet, creation of views, editing titleblock families. Strategies for sheet naming and numbering, creation of cover sheet and 3d renderings.* *Addition of Annotation, labels, notes, leaders, dimensions.*
		Graded Submission Due by Next Class	**Drawing Set to Date – Plans, Sections, Details**
11	*21*	**Façade Development : Windows & Curtain Walls**	Revit: Punched openings and curtain wall systems. Adding doors to curtain walls, modifying panels and changing materials and colors for spandrel glass. Façade wall section development and detailing.
	22	**Façade Development: Masonry Walls** *Sweeps and Reveals, wall sections*	*Revit: Creating masonry walls with sweeps and reveals. Creation of custom profiles. Creation of wall section and details and sheet layout.* Façade wall section development and detailing.
12	*23*	**Façade Development: Precast Panel Systems** *Construction and design of precast facades*	*Revit: Methods of creating a precast panel system including the use of reveals, the use of curtain wall tools and other techniques.* **1st - Mid-semester Project Drawings submitted to professor for grading.**
	24	**Mid-Semester Project Presentation** *Team Zoning & Site /Individual Projects*	*Presentation: Full pinup of Team Zoning and Site Drawings and full pinup of individual project drawings. Each student will be responsible for full redmarks of another students drawing set. Redmarked set to be scanned, saved s PDF and posted on OpenLa*b. **2nd Mid-semester Project Drawings submitted and plotted for pinup, student redmark & grading.**
13	*25*	**Reflected Ceiling Plans: Soffits, Details & Code**	*Revit: Layout of reflected ceiling plans, integration of lighting and mechanical systems, grids and soffits. Ceiling details and building code.* **Student Redmarks of another student project are to be submitted for grading.**
	26	**Space Layout: Enlarged Plans & Elevations**	*Revit: Development of enlarged plans and elevations. Adding furniture and developing room layout.*
14	*27*	**Details: Wall Sections & Plans**	*Revit: Individual desk crits. Development of wall sections, plan, section and elevation details of exterior walls, column conditions, special conditions, etc. Review of leaders and dimensions.* **Graded pinup of preliminary of wall section sheets for masonry walls, curtain walls & precast systems.**
	28	**Details: Wall Sections & Plans**	*Revit: Team & Individual desk crits. Development of wall sections, plan, section and elevation details of exterior walls, column conditions, special conditions, etc. Review of leaders and dimensions.*

15	*29*	**Final Presentation: Teams** *Presentations must be posted and plotted the day before – no plotting permitted on the day of presentation – no exceptions!!*	*Full pinup and juried presentation of team & individual drawings. Includes group zoning & site review, building analysis from earlier in semester, followed by individual presentations of drawings sets and details color coded to clarify assembly.* **Graded Final PowerPoint Process Presentations of individual project drawings and details** **Printed set – format 11x17 and 22x34 as required**
	30	**Final Presentation: Teams**	*Same as previous day*
		Final Submissions uploaded to blackboard	**Date will be set at the end of the semester**

Department of Architectural Technology

ARCH 2410 STUDIO IV

1 classroom hour, 8 lab hours, 5 credits

Course Description: A continuation of Studio III emphasizing concept development throughout the design process to a final spatial experience. Research and analysis, program development, flow diagrams and massing studies are used to further develop the student's concepts into their final projects. A juried presentation takes place at the completion of each project. Students design a medium size steel frame building that integrates program, form and structure. The structural design of their projects are analyzed and developed in coordination with the building technology sequence.

Course context: The second course in the integrated studio sequence. It is a required course and a prerequisite for upper level studio courses.

Prerequisites: ARCH 2310, ARCH 2305 both with a grade of C or higher, ARCH 2350

Pre- or co-requisites: ARCH 2321

Suggested Text: Ching, Francis X. *Form Space & Order*. John Wiley and Sons, 2007.

Attendance Policy: No more than 10% absences are permitted during the semester. For the purposes of record, two latenesses are considered as one absence. Exceeding this limit will expose the student to failing at the discretion of the instructor.

Course Structure: There will be three projects. Research papers, 2D and 3D drawings, and physical study models and final models will be utilized in program development, design and presentations.

Grading:		
	Research papers	15%
	Attendance and participation	10%
	Project 1	20%
	Project 2	25%
	Project 3	30%

A final grade of C or higher is required in this course to use it as a prerequisite for subsequent courses.

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions and other intellectual property owe their audience and sources accuracy and honesty in using, crediting and citation of sources. As a community of intellectual and professional workers, the college recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension and expulsion

General Education Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Distinguish** between media and **determine** the appropriate method and media required to complete a drawing or model.	1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and **Inspect** students' portfolios for quality of documentation and editing as well as organization.
2. **Communicate** ideas and information both verbally and through writing.	2. **Assess** the students' use of professional vocabulary during oral presentations and **Review** students' written descriptions of design work and feedback.
3. **Research** and **practice** information literacy skills by researching precedents.	3. **Assess** citations of research and review evidence of students' evaluation of sources.
4. Collaborate on group projects.	4. **Review** of group projects will be based on the completeness of the work as well as the effectiveness of the group's teamwork and communication skills.
5. **Apply** quantitative analysis to design.	5. **Review** students' accuracy with applying quantitative information to a design scheme.

Course Intended Learning Outcomes / Assessment Methods	
Learning Outcomes	**Assessment Methods**
Upon successful completion of this course the student shall be able to:	To evaluate the students' achievement of the learning objectives, the professor will do the following:
1. **Understand** the differences between building systems and **apply** them to design. (Knowledge)	1. **Review** students' ability to incorporate environmental systems and sustainable concepts into their design work.
2. **Diagram** the important characteristics of a building and **apply** it to the design. (Knowledge)	2. **Review** design projects to assess students' ability to incorporate a concept into their design process.
3. **Develop** parti concepts and diagrams into schematic level drawings. (Knowledge)	3. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups and students' ability to incorporate and represent organizing principles in their design work.
4. **Produce** orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)	4. **Review** students' drawing and digital modeling work where students must exhibit their visual representation skills (2-D and 3-D).
5. **Synthesize** site circulation, zoning, urban context, and views to design. (Skill)	5. **Review** students' ability to synthesize circulation, zoning, urban context, and views into a design.

6. **Synthesize** construction types, hierarchy, and light to building design. (Skill)	6. **Review** students' ability to synthesize construction types, hierarchy, and light into building design.
7. **Apply** sustainable principles to development design and construction documents. (Skill)	7. **Review** students' ability to incorporate environmental systems and sustainable concepts into their design work.

Extent and duration of projects

Project 1

- 2½ weeks
- *parti-driven*, dynamic and poetic project for a specific site (limited functional requirements)

Project 2

- 5 weeks
- *function-driven*, small to medium size project (15 to 20 spaces)

Project 3

- 7 weeks
- *form + structure/theme-driven,* medium size project (10 to 20 spaces)

Sample Course Outline

Week 1: *Discussion:* Review of architectural/graphic vocabulary and introduction to site analysis and research.
Assignment: Project 1

Week 2: *In Class:* Continue working on Project 1. Evaluation and redevelopment.
Homework: Complete Project 1

Week 3: *Presentation:* Final juried presentations of Project 1. Introduction to Project 02.
Assignment: Project 2

Week 4: *In Class:* Presentation of research and site analysis. Review of GIS.
Homework: Continue development of Project 2

Week 5: *In Class:* Development of plans and study model. Lecture on using computer fabrication to produce models.
Homework: Continue development of Project 2

Week 6: *Discussion:* factors contributing to successful elevations—treatment of fenestration, articulation of parts, expression of interior spaces, welcoming entrance, use of materials; structure— structural principles, integration of structure and design, structure as generator of form.
In Class: Refinement of plans. Development of building sections and elevations.
Homework: Continue development of Project 2

Week 7: *In Class:* Development of final models. Refinement of plans.
Homework: Continue development of Project 2

Week 8: *Presentation:* Final juried presentations of Project 2. Introduction to Project 3.
Assignment: Project 3

Week 9: *In Class:* Presentation of research and site analysis. Discussion of approaches to solving the design problem. Development of the program and determination of a parti. Develop flow diagrams, organize the program schematically, both graphically and in model form. Develop schematic design.
Homework: Continue development of Project 3

Week 10: *Discussion:* In-depth investigation of architecture as interior and exterior sculpture. How to manipulate interior spaces to create exterior form. Evaluation and redevelopment of design.
Homework: Continue development of Project 3

Week 11: *Discussion:* Integration of building code requirements, ADA, hierarchy of spaces, incorporation of structure and mechanical systems into the design. Continue design development.
Homework: Continue development of Project 3

Week 12: *Discussion:* Importance of natural light in architecture, various means of fenestration, concepts of solid and void in the development of building facades. Continue design development, models, plans, sections. Review of using laser cutters to produce fenestration study models.
Homework: Continue development of Project 3

Week 13: *Discussion*: Criteria for final presentations. Development of final design, models, plans, sections, elevations.
Homework: Continue development of Project 3

Week 14: *In Class:* Design and presentation refinements.
Homework: Complete Project 3
Presentation: Final juried presentations of Project 3.

Week 15: *In Class:* Portfolio review.

Minutes from Department of Architectural Technology Meetings

ARCHITECTURE TECHNOLOGY
New York City College of Technology at the City University of New York

Date: Thursday, September 22 12:42 – 2:30 pm

Present: Professors: Sanjive Vaidya (chair), Phillip Anzalone, Alexander Aptekar, llya Azaroff, Esteban Beita, Ting Chin, Ken Conzelmann, Lia Dikigoropoulou, Michael Duddy, Wendell Edwards, Claudia Hernandez-Feiks, Jihun Kim, Paul C. King, Anne Leonhardt, Agustin (Tim) Maldonado, Jill Bouratoglou, Jason Montgomery, Shelley Smith, Robert Zagaroli 3rd
Excused: Barbara Mishara
Absent: None

Tech Minute(s):

1. Active Directory Migration
2. Novell has already been uninstalled and email will move to Outlook by October.

A. Old & New Business

1. Good and welfare: IIlya will be presenting in Saratoga / Philip Anzalone will be presenting and making the key note speech at the AIA NY center for Architecture.
2. Field Trip Forms: Please notify all adjuncts of protocol & Title IX Training: MANDATORY
3. Title IX: Interns required to complete training.
4. Multiple Positions Forms: Due: complete
5. Adjuncts Personal Files: SET's and Observations should be available to the entire faculty in order to be prepared before making observations.

B. Reports and Presentations

1. Review Survey Data:
   a. The survey data was gathered from 100 students.
   b. Results of the survey will be sent to everyone as a pdf by Alexander.

2. AAS Review
   a. (Claudia) There is a need to address class sizes in the foundation courses, currently the limit is 22, however it should be 18 to improve the class learning and time the instructor spends with each student.
   b. (Tim) After reviewing the report, all faculty should list all the courses they have taught, instead of listing them by semester.
   c. (Jason) The first draft of the proposal is a responsible response to the NAAB questions and requirements.

3. Voting

   a. Formally submit report this September 30th, pending edits which will be addressed later.
      - **19 for, 0 against**

   b. Combining Vis I and Foundations and making it 5 credits.
      - **18 for, 1 against**

   c. Creation of the course "Introduction to Architecture" (3 credits) with a component to support the foundation courses.
      - **19 for, 0 against**

   d. 1121 will now become a 3 credit course.
      - **19 for, 0 against**

e. 2321 History from 1900 to now.
   - **No change, no vote.**

f. Site Planning will be introduced in the 3rd semester and the credits increased to 3. Also, a design component will be added to the course.
   - **18 for, 1 against**

g. The number of students should be limited to 15 in design 3 and 4. The course should be 5 credits and 9 contact hours.
   - **17 for, 0 against. (2 faculty members: Shelley Smith and Illya Azaroff, departed the meeting prior to the vote.)**

ARCHITECTURE TECHNOLOGY
New York City College of Technology at the City University of New York

Date: Tuesday, September 27, 2016

Present: Michael Duddy, Sanjive Vaidya, Phillip Anzalone, Agustin (Tim) Maldonado, Esteban Beita, Alexander Aptekar, Jason Montgomery, Paul C. King, Illya Azaroff, Jill Bouratoglou, Anne Leonhardt, Lia Dikigoropoulou, Barbara Smith Mishara, Jill Bouratoglou, Shelley Smith

Late: Claudia Hernandez, Wendell Edwards, Ken Conzelmann,

Excused: Jihun Kim, Robert Zagaroli 3rd ,Ting Chin

C. Review of Curriculum Proposal for AAS Submission Report

6. (Paul King) The Intro to Architecture course is made to support the foundation courses.
7. (Jill Bouratoglou) In regard to the B-Tech courses, If B-Tech 1 moves, do we remove B-Tech 4, no other schools have four B-Tech courses.
8. (Paul King) If B-Tech one is to be made stronger, than it has to incorporate some element of drawing skills.
9. (Jill and Lia) There is some concern regarding the problems of changing course numbers, which would affect the planning of courses.
10. (Alexander Aptekar) Why not change the content of the courses instead of the number to prevent any problems.
11. (Shelley Smith) If we add credits to B-Tech 1& 2 we can make them stronger, so they are more prepared for B-Tech 3.
12. (Paul King) We have to be careful not to overload the first semester with too many credits, or it might result in students dropping and failing.
13. (IIlya Azaroff) The proposed "Intro to Architecture " course needs to address the basic concepts of architecture, what is architecture, what architects do, and experiencing architecture. At the moment the course is being packed with too many ideas, when it should be addressing the basic concepts of architecture in order to give students and ideas of what to expect later on.
14. (IIlya Azaroff) Intro to Architecture and B-Tech 1 should course of their own and should not be combined. Intro to Arch is there to show what students will be doing for the rest of their life so they can decide if they want to continue in architecture.
15. (Jason Montgomery) Another possibility is to make B-Tech 4 a capstone?
16. (Paul King) Why not reposition B-Tech 4 to provide an introduction of the next two years. Nothing is happening in the 3rd and 4th year to reinforce the students experience in architecture or it could also provide support for thesis. We should keep B-Tech 1,2,3 as they are and revisit B-Tech 4 and its content at a later time.
17. (Jason Montgomery) B-Tech 1 and 2 have the largest failing rates of 60 to 70%, maybe we are pushing too much content into these courses.

18. (Sanjive) We have two options:
    a. B-Tech is taught in the first semester, combining Intro to Arch and B-Tech 1 or
    b. Intro to Arch stays as a separate course and B-Tech 1 is moved back
19. (Paul King) Many students in the first semester are taking remedial courses when they enter our program, which means they are already out of sequence, making moving B-Tech 1 backwards more important so they can catch up and be part of the entire cohort.
20. (Alexander Aptekar) Alexander proposed to create a two credit research topics class, possibly making it a capstone and a required class to complete the AAS degree. This would take the place in the 4th semester and could support Design IV and B-Tech III. This would force students to finish the AAS degree and improve numbers in our department.
21. (Barbara Mishara) The History and Site Planning courses have to remain three credits, they cannot be two.

4. Voting

h. The voting process for the future of "Intro to Architecture and "B-tech 1" was finalized through a process of elimination, where six options were created. The six options also gave possibilities to how the remaining two credits would be used.

- Option 1: Intro to Arch (4), B-Tech 1 (4)
- Option 2: Intro to Arch (4), B-Tech II (4)
- Option 3: Site Planning (2), Structure (3)
- Option 4: Intro to Structures (2), (semester 4)
- Option 5: Intro ti Arch (4), Structures (3)
- Option 6: New two credit mystery course

Final Voting:

- **Option 1**
- **for: 13**
- **against: 5**
- **abstain: 2**

Consultation with Affected Departments

REVISED Letter of Support – Re: AAS Curriculum Modifications

From: MaryAnn Biehl
To: Sanjive Vaidya
CC: Jason Montgomery
Date: Tuesday – September 27, 2016 11:02 AM
Subject: REVISED Letter of Support – Re: AAS Curriculum Modifications

Dear Sanjive,

I enthusiastically support this well considered and thorough curriculum proposal. It will simplify and strengthen your associate level foundation courses, thus preparing students for success at the bachelor level. These changes will also support your program's accreditation efforts.. COMD has recognized the value of the accreditation process as a tool for reflection and continual improvement, so we appreciate your hard work as you navigate the accreditation process.

Best regards,
Mary Ann

Chair, Dept. of Communication Design
New York City College of Technology, CUNY
300 Jay Street, Brooklyn NY, 11201
mbiehl@citytech.cuny.edu

>>> Sanjive Vaidya 09/26/16 9:58 AM >>>
Dear MaryAnn,

As you know the department is working towards an accredited 5 year degree. Our first step is to make some modifications to the AAS degree in order to improve the breadth of knowledge of the entering student body and equip them with the tools to enter an accredited program.

The highlights are as follows:

1. Simplify the Foundations/ Visual Studies courses by combining them.
2. Increase credit & contact hours for Design III & IV.
3. Move the Building Tech 1 course into the second semester and introduce a new course "Introduction to Architecture" as a way of giving student a broader understanding of the field.
4. Modify the Site Planning course to incorporate more sustainable design content. The name will change to Site Planning & Sustainability.
5. Eliminate the requirement of Building Systems and Structures 1 in the AAS degree.

Attached is a draft of the AAS modifications for College Council. I'm distributing these to departments we have close interaction in order to secure letters of support.

Would you please take a look and provide us with a letter of support from your department. We are looking to make the submission this week.

So I'm hoping I may get a letter from you as soon as possible !

Thanks,

Sanjive

Sanjive S. Vaidya
Department Chair | Department of Architectural Technology
New York City College of Technology
twitter | **instagram** | **archinect** | **techne**
e: svaidya@citytech.cuny.edu
o: 718.260.5262

NEW YORK CITY COLLEGE OF TECHNOLOGY
The City University of New York

Environmental Control Technology Department
186 Jay Street - Room V437, Brooklyn, N.Y. 11201-1909
(718) 260-5160 Fax (718) 260-5218

Date: September 27, 2016

Re: AAS Curriculum Modifications in Architectural Technology

Dear Professor Vaidya,

The Environmental Control Technology Department is aware of your proposed AAS Curriculum Modifications. We understand that these changes will ultimately help students transition more effectively to a Bachelor in Architecture degree.

The Environmental Control Technology Department fully supports these modifications.

Sincerely,

Robert Polchinski

Robert Polchinski, Chair,
Environmental Control Technology Department

Letter from Academic Dean

New York City College of Technology
The City University of New York
School of Technology and Design
Office of the Dean
186 Jay Street · V806
Brooklyn, NY 11201-1909
718.260.5525 · Fax 718.260.5524

September 28, 2016

Sanjive Vaidya
Department Chair
Department of Architectural Technology
New York City College of Technology

Dear Professor Vaidya,

I am writing this letter of support for the Architectural Technology's department's proposed curriculum restructure of years one and two. This restructuring will facilitate program alignment with the National Architectural Accreditation Board (NAAB) requirements for an accredited Bachelor of Architecture (BARCH) degree. The ultimate goal is to prepare our students to be highly successful professionals in their field and keep the program in line with today's standards.

I strongly support this proposal.

Regards,

Kevin Hom, AIA
Dean School of Technology and Design

cc. College Council

Library Resources & Information Literacy

LIBRARY RESOURCES & INFORMATION LITERACY

Course proposer: please complete boxes 1-4. **Library faculty subject selector:** please complete box 5.

1

Title of proposal Introduction to Architecture	**Department/Program** Architectural Technology
Proposed by (include email & phone) Michael Duddy MDuddy@CityTech.Cuny.Edu 917.517.4666	**Expected date course(s) will be offered** Fall 2017 **# of students** 16-25

2

Are City Tech library resources sufficient for course assignments? Please elaborate.

Yes. Course will be a direct response to current events with a reliance on existing resources that already exist in the library in support of other Architecture courses. Current event resources needed will include periodicals and newspapers and web related resources.

3

Are additional resources needed for course assignments? Please provide details about format of resources (e.g., ebooks , journals, DVDs, etc.), author, title, publisher, edition, date, and price.

No specific additional resources can be identified at this time. As each section of this course may focus on a different topic or topical event requests for additional resources will be made as needed the semester prior to the offering of any section.

4

Library faculty focus on strengthening students' information literacy skills in finding, evaluating, and ethically using information. We can collaborate on developing assignments and offer customized information literacy instruction and research guides for your course.

Do you plan to consult with the library faculty subject specialist for your area? Please elaborate.

Yes - the semester prior to the running of any section.

5

Library Faculty Subject Selector_ Prof. Nora Almeida
Comments and Recommendations:

This course will provide an excellent opportunity for the library to work with Architectural Technology faculty to help further develop the library's collection. The library will ensure that upcoming monograph purchases reflect the focus of new and revised courses covering foundational architecture concepts and design principles in a global context. The course will enhance collection development overall in both Architectural Technology and related fields.

Date ***September 30, 2016***

1	**Title of proposal** History of World Architecture up to 1900	**Department/Program** Architectural Technology
	Proposed by (include email & phone) Michael Duddy MDuddy@CityTech.Cuny.Edu 917.517.4666	**Expected date course(s) will be offered** Fall 2017 **# of students** 16-25

2 **Are City Tech library resources sufficient for course assignments? Please elaborate.**

Yes. Course will be a direct response to current events with a reliance on existing electronic and print resources from library holdings that support Architecture courses. Resources needed will include periodicals (scholarly and trade journals), newspapers, and internet resources.

3 **Are additional resources needed for course assignments? Please provide details about format of resources (e.g., ebooks , journals, DVDs, etc.), author, title, publisher, edition, date, and price.**

No specific additional resources can be identified at this time. As each section of this course may focus on a different topic or topical event requests for additional resources will be made as needed the semester prior to the offering of any section.

4 **Library faculty focus on strengthening students' information literacy skills in finding, evaluating, and ethically using information. We can collaborate on developing assignments and offer customized information literacy instruction and research guides for your course.**

Do you plan to consult with the library faculty subject specialist for your area? Please elaborate.

Yes - the semester prior to the running of any section.

5 **Library Faculty Subject Selector_ Prof. Nora Almeida**
Comments and Recommendations:

This course will provide an excellent opportunity for the library to work with Architectural Technology faculty to help further develop the library's collection. The library will ensure that upcoming monograph purchases reflect the focus of new and revised courses covering foundational architecture concepts and design principles in a global context. The course will enhance collection development overall in both Architectural Technology and related fields.

Date ***September 30, 2016***