

Introduction to Architecture 1341

Architecture is one of the most exciting and rewarding professions one can pursue. It is a culture and way of being unto itself. It is not easy and requires hard work and dedication. The purpose of the freshman architecture coursework (1301, 1341, 1342) is twofold; to provide a foundation of basic skills necessary to the architectural education process, and expose you to the culture of architecture. Your participation in this process will empower you to take charge of your educational experience. During the course of your first year you will learn about what it means to be an architect as well as what the architectural education process entails. At some point during the year you will need to weigh the decision about whether or not to pursue architecture as your primary field of study. Our hope is that you make the most informed decision possible in order to best ensure your future success. Please feel free to ask questions of your instructors about anything that may be helpful in this endeavor....and have fun.

Curiosity: (cu-ri-so-i-ty)

- A- The desire to know or learn about anything: inquisitiveness
a : Inquisitive interest in other's concerns : nosiness
b: Interest leading to inquiry <**intellectual curiosity**>

Examples of Curiosity:

"Her natural curiosity led her to ask more questions."

"The movie failed to satisfy her curiosity about the subject."

Synonyms: Curiousness, Inquisitiveness, Nosiness

"Architecture tends to consume everything else, it has become one's entire life"

-Arne Jacobsen

"I prefer drawing to talking. Drawing is faster, and leaves less room for lies."

-Le Corbusier

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The University of Texas at Arlington School of Architecture

Syllabus: **Architecture 1341** Design Communications I (3 credit hours)

Section- 004 & 005

Room- Arch Annex 105

M-W 9:00-11:50 & 2:00-4:50

Prerequisites: Department Consent

Instructor: Dustin Wheat drwheat@me.com

Office: 321

Office Hours: By Appointment

Course Description:

Design Communications I: ARCH 1341 is an introduction to basic, architectural graphic representation techniques. The course will emphasize freehand drawing, seeing, and recording. Students will be exposed to different modes of thought brought about by the questioning of their observations through drawing.

Course Objectives:

- To develop basic habits for successful learning
- To develop a consistent work ethic
- To develop an understanding of the culture of architecture
- To develop an “architectural vocabulary” as a foundation for discussing and evaluating work
- To develop proficiency in the graphic skills necessary for architectural drawing, making and thinking
- To gain exposure to a variety of graphic and physical representational techniques
- To develop a foundation of drawing as the means of architectural problem solving
- To develop a consistent set of basic graphic tools in order to engage the discourse of design

NAAB (National Architectural Accreditation Board) Requirements: (See attached Student Performance Criteria for a comprehensive outline of NAAB objectives for the architecture program) Sections A.2, A.3 and A.8 pertain to this course.

Overview:

Architecture 1341:

Drawing is the fundamental vehicle through which architects solve problems, make decisions, and communicate ideas. The basic tenant of understanding this type of graphic communication is the freehand drawing. All of the representations incorporated in drawings whether hand drafted, computer drafted, digitally manipulated, or modeled are directly related to the graphic conventions of the freehand drawing.

This course is an introduction to the use of drawing as a mode of seeing and thinking. The course will investigate drawing within the dual concepts of observation and representation.

Referential Drawing: (Drawing as a Reference) The referential drawing is a reflection of the author's experience (observation) through the recording of “what” and “how” they see by “what” and “how” they draw. It focuses on freehand drawing for the exploration of various topics. Through a series of questions intended to elucidate the true nature of the subject matter, the symbol or icon of the subject is rendered moot. By removing the symbol, and therefore preconceptions about what the result should be, the drawing may be used as a tool for discovering new relationships and recording ideas.

Representational Drawing: (Drawing as Representation) The representational drawing can be read in multiple ways. It may be seen as (A) a way of representing an idea, concept or experience as simulacrum. The drawing itself becomes the symbol or icon of the reality it seeks to represent. The drawing (B) may also be a vehicle for the exploration of technique as it applies to the reinforcement of a concept; in other words how the subject is represented. The third alternative (C) is the act of RE – presenting the subject matter. This may be seen as the act of re-presenting and / or transforming the subject matter.

Attendance Policy:

Attendance for class is required. Arch 1341 and Arch 1342 are foundation courses that are essential to developing visual representation skills necessary for success in the School of Architecture. Students are allowed three (3) absences for which it is not required to provide a reason for the absence. After three absences students will be advised of the number of absences and should consider dropping the class. It is the student's responsibility for dropping a course. The instructor may not drop a student for any reason. More than three absences will result in a half letter grade reduction in the final course grade for each class period missed after that point. Students should be present on time and ready to work and stay the entire class period. Late arrivals and early departures will result in a ½ absence. Disappearing during class may result in an absence being noted.

Outside work obligations or personal issues are not acceptable for incomplete work or absences.

Studio Culture:

These courses are the foundation of the curriculum for the School of architecture at the University of Texas at Arlington. The importance of developing good work habits and time management cannot be over-emphasized. Architecture is an exciting field that offers almost limitless creative opportunities. The core of the discipline is the studio culture. Working in the studio fosters a sense of camaraderie and community that allows for the free exchange of ideas that is critical to being successful in our field. Eventually it is through the peer group that most learning occurs. Maintaining a healthy, productive studio culture in and out of the set class times is expected. Your studio workspace should be set up and maintained in order to allow for real work to be done during class time. Most importantly this includes a space for drawing.

Supplies:

There is a list of supplies attached in this packet. The cheapest place to buy your supplies is from the university bookstore. You do not have to buy your supplies from the university bookstore and may find the same materials at other local art or hobby stores. You should purchase these supplies after your first class and be prepared to work during the second class meeting.

Reading:

The main course textbook is "Rendering in Pen and Ink". There is an attached bibliography that represents books or articles that inform the topics of the course or may be directly related to the specific assignments of the course. Some articles on the list may be required as reading assignments by your instructor, the others are for you to explore on your own. Reading assignments are to be completed before the beginning of the following class period. Reading assignments are supplemental learning tools and lead to a greater understanding of the principles being discussed during the course.

Quizzes:

Quizzes may be given periodically and it is the student's responsibility to be current with course material by asking questions and note taking.

Sketchbooks:

Sketching is an essential tool to convey ideas to others as well as develop architectural concepts and begin an internal dialog that will foster a greater understanding of ideas and concepts. Your sketches are a record of how and what you see. Notes may also be taken throughout the semester. Students who keep a consistent sketchbook throughout the semester will be eligible for extra credit at the end of the semester.

Grading Policy:

Project Types: Assignments will be broken down into three categories.

- Project One- One day exercise (Generally performed in class)
- Project Two- Two day exercise (Performed in class and extended over the weekend between Wednesday to Monday or Thursday to Tuesday)
- Project Three- One week exercise (Performed in class on both days and extended over the weekend, Monday to Monday or Tuesday to Tuesday)

Grade Calculations:

Each project will be weighted based on the amount of time (days) spent working on them. There are 16 weeks in the semester which equals 110 total days. To calculate the weighting divide the number of days per exercise or total days per a project type and divide by 110. Some modification due to specific assignments may be made by instructors.

- Project One- There will be approximately (11) one day exercises, therefore they will count 10% of the final grade. $(11 / 110 = .10 \times 100 = 10)$
- Project Two- There will be approximately (11) two day exercises for a total of 22 days spent. They will count 20% of the final grade. $(22 / 110 = .20 \times 100 = 20)$
- Project Three- There will be approximately (06) one week exercises. They will count 50% of the final grade. $(55 / 110 = .5 \times 100 = 50)$
- Sketchbook: Submitted during the last week of the semester and will count for 10% of the final grade.

Instructor's Evaluation- The instructor's evaluation of the student's work will account for the remaining 10%

Late Work:

Assignments are due at the beginning of each class period. Late work will be accepted the class period after it is due for a full letter grade reduction. Late work will not be accepted after the second class period from when the assignment was originally due.

Grade Equivalences :

Descriptor	Evaluation	Equivalence	Letter Grade	Number Grade
Excellent		10	A	95
		9	B+	87
Good		8	B+	83
		7	B-	80
Acceptable		6	C+	77
		5	C+	73
		4	C-	70
Needs Improvement		3	D	63
Unacceptable		2	F	55
No Evidence		1	NE	0

Grade Classifications:

Grades are given based on the student's comprehension, synthesis, execution, and craft of a given drawing problem. Grades are not given for the amount of effort put forth, or for simply showing up. Each student will be given every opportunity to be successful. The grade received will be the grade earned.

A- Exceptional / Outstanding / Excellent (89.6-100.0)

The student demonstrates **mastery** of the problems presented and **exceeds** expectations for scope of work, solution, craft, and presentation. The student has shown a high level of critical thinking, problem solving and has developed a consistent graphic language and work ethic. The student is **always** prepared for class with new material for discussion each class period. Dialog with the professor, fellow students and presentation of material is clear, professional and consistent.

B- Good / Above Average (79.6-89.5)

The student clearly demonstrates **strong** comprehension of project objectives, vocabulary, and reading assignments. Student is attentive, shows steady improvement throughout the semester and engages in most discussions. The student is **often** well prepared for class with **new** material for discussion each class period. All assignments are well crafted and the student's response to the given objectives is above average.

C- Acceptable / Average (69.6-79.5)

The student demonstrates a **basic** comprehension of the objectives, vocabulary, and reading assignments. Projects reflect some improvement over the course of the semester. The student is prepared for most sessions and asks few questions during class discussions or lectures. The student completes the bare minimum required for the assignments.

D- Needs Improvement / Below Average / Poor (59.6-69.5)

The student exhibits a **poor** comprehension of project objectives, vocabulary and reading assignments. The student does not demonstrate improvement and is ill-prepared for each class period. The student **rarely** engages in class discussion, shows little initiative, assignments are rarely completed on time and craft is generally poor.

F- Unacceptable / Failing (0.0-59.5)

Student **fails** to demonstrate comprehension of project objectives, vocabulary, and reading assignments. There is little or no improvement during the semester. The student is poorly prepared for class and does not engage in class discussions. Craft is unacceptable.

NE- No Evidence (0.00)

No Evidence of work being performed. Student does not turn in assignments or does not show a minimum of required content.

Academic Dishonesty:

It is the philosophy of the University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. Plagiarism includes any un-credited work copied from the Internet.

“Scholastic Dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any acts designed to give unfair advantage to a student or the attempt to commit such acts.: [Regents Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22]”

Americans with Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112- The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities ACT-(ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of that disability, Student responsibility primarily rests with informing the faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Student Support Services:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transitions, and federally funded programs. Students requiring assistance

PART TWO (II): SECTION 1 – STUDENT PERFORMANCE -- EDUCATIONAL REALMS & STUDENT PERFORMANCE CRITERIA

The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice.

The school must provide evidence that its graduates have satisfied each criterion through required coursework. If credits are granted for courses taken at other institutions or on line, evidence must be provided that the courses are comparable to those offered in the accredited degree program.

The criteria encompass two levels of accomplishment: Understanding and Ability

Understanding: The capacity to classify, compare, summarize, explain and/or interpret information.

Ability: Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

II 1.1-Student Performance Criteria: The SPC are organized into realms to more easily understand the relationships between individual criteria.

The NAAB establishes performance criteria to help accredited degree programs prepare students for the profession while encouraging educational practices suited to the individual degree program. In addition to assessing whether student performance meets the professional criteria, the visiting team will assess performance in relation to the school's stated curricular goals and content. While the NAAB stipulates the student performance criteria that must be met, it specifies neither the educational format nor the form of student work that may serve as evidence of having met these criteria. Programs are encouraged to develop unique learning and teaching strategies, methods, and materials to satisfy these criteria. The NAAB encourages innovative methods for satisfying the criteria, provided the school has a formal evaluation process for assessing student achievement of these criteria and documenting the results.

For the purpose of accreditation, graduating students must demonstrate understanding or ability as defined below in the Student Performance Criteria (SPC):

Realm A: Critical Thinking and Representation:

Architects must have the ability to build abstract relationships and understand the impact of ideas based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. This ability includes facility with the wider range of media used to think about architecture including writing, investigative skills, speaking, drawing and model making. Students' learning aspirations include:

- Being broadly educated.
- Valuing lifelong inquisitiveness.
- Communicating graphically in a range of media.

- Recognizing the assessment of evidence.
- Comprehending people, place, and context.
- Recognizing the disparate needs of client, community, and society.

- A. 1. Communication Skills:** Ability to read, write, speak and listen effectively.
- A. 2. Design Thinking Skills:** Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.
- A. 3. Visual Communication Skills:** Ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.
- A. 4. Technical Documentation:** Ability to make technically clear drawings, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.
- A. 5. Investigative Skills:** Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.
- A. 6. Fundamental Design Skills:** Ability to effectively use basic architectural and environmental principles in design.
- A. 7. Use of Precedents:** Ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects.
- A. 8. Ordering Systems Skills:** Understanding of the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
- A. 9. Historical Traditions and Global Culture:** Understanding of parallel and divergent canons and traditions of architecture, landscape and urban design including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.
- A. 10. Cultural Diversity:** Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects.
- A. 11. Applied Research:** Understanding the role of applied research in determining function, form, and systems and their impact on human conditions and behavior.

Realm B: Integrated Building Practices, Technical Skills and Knowledge:

Architects are called upon to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to their services. Additionally they must appreciate their role in the implementation of design decisions, and the impact of such decisions on the environment. Students learning aspirations include:

- Creating building designs with well-integrated systems.
- Comprehending constructability.
- Incorporating life safety systems.
- Integrating accessibility.
- Applying principles of sustainable design.

- B. 1. Pre-Design:** Ability to prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.
- B. 2. Accessibility:** Ability to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.
- B. 3. Sustainability:** Ability to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations through means such as carbon-neutral design, bioclimatic design, and energy efficiency.
- B. 4. Site Design:** Ability to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of a project design.
- B. 5. Life Safety:** Ability to apply the basic principles of life-safety systems with an emphasis on egress.
- B. 6. Comprehensive Design:** Ability to produce a comprehensive architectural project that demonstrates each student's capacity to make design decisions across scales while integrating the following SPC:

- A. 2. Design Thinking Skills
- A. 4. Technical Documentation
- A. 5. Investigative Skills
- A. 8. Ordering Systems
- A. 9. Historical Traditions and Global Culture
- B.2. Accessibility
- B.3. Sustainability
- B.4. Site Design
- B.5. Life Safety
- B.8. Environmental Systems
- B.9. Structural Systems

- B. 7 Financial Considerations:** Understanding of the fundamentals of building costs, such as acquisition costs, project financing and funding, financial feasibility, operational costs, and construction estimating with an emphasis on life-cycle cost accounting.
- B. 8 Environmental Systems:** Understanding the principles of environmental systems' design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance

assessment tools.

- B. 9. Structural Systems:** Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.
- B. 10. Building Envelope Systems:** Understanding of the basic principles involved in the appropriate application of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
- B. 11. Building Service Systems:** Understanding of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security, and fire protection systems.
- B. 12. Building Materials and Assemblies:** Understanding of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.

Realm C: Leadership and Practice:

Architects need to manage, advocate, and act legally, ethically and critically for the good of the client, society and the public. This includes collaboration, business, and leadership skills. Student learning aspirations include:

- Knowing societal and professional responsibilities.
- Comprehending the business of building.
- Collaborating and negotiating with clients and consultants in the design process.
- Discerning the diverse roles of architects and those in related disciplines.
- Integrating community service into the practice of architecture.

- C. 1. Collaboration:** Ability to work in collaboration with others and in multidisciplinary teams to successfully complete design projects.
- C. 2. Human Behavior:** Understanding of the relationship between human behavior, the natural environment and the design of the built environment.
- C. 3 Client Role in Architecture:** Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.
- C. 4. Project Management:** Understanding of the methods for competing for commissions, selecting consultants and assembling teams, and recommending project delivery methods.
- C. 5. Practice Management:** Understanding of the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.
- C. 6. Leadership:** Understanding of the techniques and skills architects use to work collaboratively in the building design and construction process and on environmental, social, and aesthetic issues in their communities.
- C. 7. Legal Responsibilities:** Understanding of the architect's responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and

accessibility laws.

C. 8. Ethics and Professional Judgment: Understanding of the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.

C.9. Community and Social Responsibility: Understanding of the architect's responsibility to work in the public interest, to respect historic resources, and to improve the quality of life for local and global neighbors

The University of Texas at Arlington

University Bookstore
400 S Pecan St
Arlington, TX 76010
www.uta.bkstr.com



School of Architecture
Design Communications I *Fall 2011*

The University Bookstore would like to offer 10% off one clothing item with the purchase of the following supplies. *Valid through 09/30/11*

Supply List

- 1) Strathmore Sketch Pad 18" x 24", 400 series
- 2) Sketch Board with spring clips
- 3) Portfolio Carrying Case
- 4) Cutting Mat 18" x 24"
- 5) Stainless Steel Ruler w/cork back 24"
- 6) Architect Scale 12"
- 7) Drafting Dots
- 8) Bombay India Ink
- 9) Aluminum Push Pins
- 10) X-Acto Knife w/ cushioned grip
- 11) Faber Castel Pitt Artist Pen Set – 4 pc
- 12) General Charcoal Set
- 13) Soft Lead Pencil Set – HB, B, 2B
- 15) Pastel Set – grey scale

Total kit cost \$78.95 + \$6.32 (tax) = \$85.27

Design Vocabulary Terms:

Abstraction: The alteration of subject matter based on intellectual manipulations that focuses on general rather than specific qualities.

Additive Process: A design process based building up of forms or objects.

Analogue / Analog: An object, concept or situation which resembles a different situation. One thing that shares common elements with, but is not directly derived from another.

Analysis: The separation of any material or object into its constituent components.

Atmospheric Perspective: Achieving a reading of depth in a 2D work developed through the visual properties of color and tonal value.

Blind Contour: Contour or profile drawing made without stopping the drawing instrument or looking at the paper.

Composition: The considered, ordered manner in which parts or elements may be combined to make a whole.

Construction Line: Light lines used as a tool to organize a drawing or composition. These lines help the observer more accurately construct what they see.

Contour Line: The outline of a figure or body; the edge or line that defines or bounds a shape or object.

Contrast: Opposition or juxtaposition of different forms, lines, or colors in a work of art to intensify each elements properties and produce a more dynamic expressiveness.

Cross Contour: Lines used emphasize the volume of an object, form, or surface. They may be horizontal, vertical, or bidirectional.

Diagram: Drawing that outlines the parts or operation of something.

Figure / Ground: (Figure / Field) – Visual relationship between two highly contrasting fields (normally black and white). The viewer may simultaneously perceive the dark tone as object (figure) and the light tone as the background (ground) as well as the light tone as object (figure) and the dark tone as background (ground). The ambiguous readings may be used as a design tool.

Foreshortening: The distortion of an object in order to create a reading of depth in a 2D image. Achieved by compressing the object.

Form: The three dimensional quality of a volume or object.

Geometric Forms: Shapes governed by the mathematical laws described by geometry. (Square, Circle, Triangle etc)

Gestural Drawing: Drawing that is executed in a rapid, expressive manner.

Hue: Any color that exists within the light spectrum, not pigmented color.

Line: The connection of two points in space by the most direct route. In geometrical theory it has no width or height. It only has depth in one dimension which is known as its length. However in drawing the thickness of the line is used to develop a hierarchical reading of depth based on the visual weight. (See Line weight)

Line Quality: The visual qualities of line work of a particular drawing or sketch. Includes line weight (heavy vs light), craft, fuzziness, sharpness, and intersections. Used to to develop a reading of depth or a hierarchy of objects within a drawing.

Line weight: Visual thickness of a line used to establish a hierarchical reading within a drawing. Ranging from heavy to light; thick to thin

Line type: Continuous or solid, dashed, dotted, center line etc.

Mass: The visual weight or density of an object in a composition. Most easily evaluated in relation to other objects or groups of objects within a composition.

Negative (Form, Shape): A form, shape or object that takes on a visual reading of being subtracted from a field or other object.

Negative Space: In a drawing or composition the space that surrounds an object or group of objects. Closely related to "field" or "ground".

Order: Condition in which each thing is properly disposed with reference to other things and to it's purpose. Methodical or harmonious arrangement.

Profile Line (Outline): Lines that only delineate the profile of an object.

Plane: Any flat two dimensional surface.

Point of View: Station point of viewer or observer in a given situation. Relates to placement of the viewer in a perspective or photo.

Positive (Form, Shape): A form, shape, or object that takes on the visual reading of being added to a field or object.

Proportion: Having to do with a proper relation between parts. An objects relation of it's parts to the sum of it's parts. Some systems include modular, Fibonacci, and Golden Mean.

Scale: 1-Graduated line representing proportionate size.
2-An objects size relative to other objects.

Shade: A color that is produced by the addition of black.

Sighting: The act of visually measuring observed objects, forms, or spaces based on their relation to one another.

Subtractive: A design process of taking away from a whole. The resulting image or artifact visually represents this process.

Texture: The surface quality of an object or image.

Tint: A color that is produced by the addition of white.

Tone (Tonal Value): Is the degree of lightness or darkness of an area. Generally refers to a scale from white to black. Used to develop depth and three dimensional reading in a drawing.

Value: Value refers to the lightness or darkness of a color. Value is critical in a work done without color as it is the only means of developing a readings of depth.

Reading List:

Books:

A Guide to Drawing; Faber, David and Mendelowitz, Daniel; Teel; San Francisco, Wadsworth Publishing, 8'th ed. 2011.

Architects Draw; Gussow, Sue Ferguson, Teel; New York, Princeton Architectural Press, 2008.

Beautiful Evidence; Tufte, Edward; Cheshire CN, Graphics Press LLC, 2006.

Berger; On Drawing; Berger, John; Cork Ireland, Occasional Press , 2'nd ed. 2007.

Drawing: A contemporary Approach; Betti, Claudia and Sale, Teel; San Francisco, Wadsworth Publishing, 6'th ed. 2007

Drawing: the Motive Force of Architecture; Cook, Peter; Chichester GB, Wiley and Sons, 2008.

Drawing on the Right Side of the Brain; Edwards, Betty; Los Angelas, Tarcher Publishing, 1999.

Experimental Drawing, Creative Exercises Illustrated by Old and New Masters; Kaupelis, Robert; New York; Watson-Guptil, Publishing, 1992.

Eleven Exercises in the Art of Architectural Drawing; Frascari, Marco; New York, Routledge, 2011.

Geometry of Design; Elam, Kimberly, New York, Princeton Architectural Press, 2001.

How to Use Your Eyes; Elkins, James, Routledge, 1ed, New York, 2003

Keys to Drawing; Dodson, Bert; Westport CN, North Light Books, 1990.

Thinking Architecture; Zumthor, Peter; Basel CH, Birkhauser Verlag, 3'rd ed. 2010.

The Thinking Hand; Pallasmaa, Juhani; Chicester GB, Wiley Publishing, 2009.

Visual Explanations; Tufte, Edward; Cheshire CN, Graphics Press LLC, 1997.

Visual Notes for Architects and Designers; by Norman Crowe and Paul Laseau; John Wiley and Sons, Inc. New York, 1984.

Articles:

The Necessity of Drawing: Tangible Speculation; Graves, Michael, Architectural Design 47, p 384-394, 1977.