Learning Objectives + Assessment Structure: January 26, 2011

The learning objectives have been organized to reflect a general structure as follows:

- 1-2: Global Statement (Knowledge)
- 3-4: Gen Ed (Knowledge and Skills)
- 5-6: Skill Sets (Skills)

Not all learning objectives fit neatly into the above categories, so there is some flexibility in the categories.

The statement to be read before all assessment categories is:

The professor will evaluate the students' achievement of the learning objectives by doing the following:

Design I: Edited

- Implement an iterative design process from problem identification, information gathering, solution generation and evaluation, implementation, presentation, and overall project evaluation. (Knowledge)
- Incorporate design concepts and vocabulary into design process and presentations. (Knowledge)
- 3. **Distinguish** between media and **Determine** the appropriate method and media required to complete a drawing or model. (Gen Ed)
- 4. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 5. **Develop** and **apply** professional vocabulary. (Gen Ed)
- Produce orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
- 7. Utilize analogue and digital media to create drawings and models. (Skill)

Design I: Assessment (Edited)

- Review students' creative process (initial sketches through to the final project) by means of frequent pin-ups. (Los: 1, 2, 3, 6, 7)
- Observe the students' use of professional vocabulary during oral presentations. (Los: 2, 4, 5)
- 3. Review students' written descriptions of design work and feedback. (Los: 4,5)

Design II: Edited

- Implement an iterative design process from problem identification, information gathering, solution generation and evaluation, implementation, presentation, and overall project evaluation. (Knowledge)
- Incorporate design concepts and vocabulary into design process and presentations. (Knowledge)
- Distinguish between media and Determine the appropriate method and media required to complete a drawing or model. (Gen Ed)
- 4. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 5. **Develop** and **apply** professional vocabulary. (Gen Ed)
- Produce orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
- 7. Utilize analogue and digital media to create drawings and models. (Skill)
- 8. Incorporate color and materials into designs and presentations. (Skill)
- 9. Represent human scale and proportion in design drawings. (Skill)

Design II: Assessment (Edited)

- Review students' creative process (initial sketches through to the final project) by means of frequent pin-ups. (Los: 1,2, 3, 6, 7, 8, 9)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los: 2,
- 3. Review students' written descriptions of design work and feedback. (Los: 4,5)

Design III: Edited

- Understand the impact horizontal and vertical circulations have on the perception of architectural space and apply it to design. (Knowledge)
- 2. **Demonstrate** an ability to design based on a concept. (Knowledge)
- 3. **Develop** parti concepts and diagrams into schematic level drawings. (Knowledge)
- Understand the difference between solid and void and positive and negative spaces and apply it in 2D and 3D designs. (Knowledge)
- Distinguish between media and <u>determine</u> the appropriate method and media required to complete a drawing or model. (Gen Ed)
- 6. Communicate ideas and information both verbally and through writing. (Gen Ed)
- Research and practice information literacy skills by researching precedents. (Gen Ed)
- 8. Apply quantitative analysis to design. (Gen Ed)
- Produce orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
- 10. **Utilize** analogue and digital media to create drawings and models. (Skill)
- 11. Synthesize site circulation, zoning, urban context, and views to design. (Skill)
- 12. **Synthesize** construction types, hierarchy, and light to building design. (Skill)

Design III: Assessment (Edited)

- 1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups. (Los: 2, 3, 6, 9, 10)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los: 6)
- 3. Review students' written descriptions of design work and feedback. (Los: 6)
- Review students' ability to incorporate circulation paths and plan organizations into a design. (Los: 1)
- 5. **Review** students' ability to incorporate a concept into their design work. (Los: 2, 3, 4)
- 6. Observe students' selection of drawing techniques. (Los: 5)
- 7. Review precedent research and bibliography (Los: 7)
- 8. Review students' accuracy applying quantitative information to a design scheme. (Los: 8)
- Review students' ability to synthesize circulation, zoning, urban context, and views into a design. (Los: 11)
- 10. Review students' ability to synthesize construction types, hierarchy, and light into building design. (Lo: 12)

Design IV: Edited

- Understand the differences between building systems and apply them to design. (Knowledge)
- Diagram the important characteristics of a building and apply it to the design. (Knowledge)
- 3. **Develop** parti concepts and diagrams into design document level drawings. (Knowledge)
- Distinguish between media and <u>determine</u> the appropriate method and media required to complete a drawing or model. (Gen Ed)
- 5. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 6. Research precedents and implement information literacy. (Gen Ed)
- 7. Apply quantitative analysis to design. (Gen Ed)
- 8. Collaborate on group projects. (Gen Ed)

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- Produce orthographic, axonometric, perspective, and architectural vignette drawings. (Skill)
- 10. Synthesize site circulation, zoning, urban context, and views to design. (Skill)
- Synthesize construction types, circulation systems, hierarchy, and light to building design. (Skill)
- 12. Apply sustainable principles to development design and construction documents. (Skill)

Design IV: Assessment (Edited)

- 1. **Review** students' creative process (initial sketches through to the final project) by means of frequent pin-ups. (Los: 2, 3, 8, 9)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los: 5, 6, 8)
- 3. Review students' written descriptions of design work and feedback. (Los: 5, 6, 8)
- Review students' ability to incorporate environmental systems and sustainable concepts into their design work. (Los: 1, 10, 11, 12)
- 5. **Review** students' ability to incorporate a concept into their design work. (Los: 2, 3, 4, 9)
- 6. Review students' accuracy applying quantitative information to a design scheme. (Los: 7)
- Review students' ability to incorporate and represent organizing principles in their design work. (Los: 3, 6, 10, 11, 12)
- 8. **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. (Los: 5, 6, 8)

Visual Studies I: Edited

- 1. Recognize the complexity of the physical world (Knowledge)
- Demonstrate understanding of computer hardware and software as used in architectural practice (Knowledge)
- Demonstrate knowledge of graphic conventions and methods of organization (Knowledge and Skill)
- 4. Communicate ideas and information orally. (Gen Ed)
- 5. Recognize design concepts and vocabulary (Gen Ed)
- 6. Document analogue materials into digital format and process and edit for presentations and portfolio. (Skill)
- Create digital 3-D models of medium geometric complexity and produce orthographic, axonometric, and perspective views. (Skill)
- 8. Create digital two-dimensional orthographic drawings. (Skill)
- Demonstrate ability to draw proportionately from life, including drawing the human figure and the built world. (Skill)
- 10. Create analogue and digital renderings. (Skill)
- 11. Manipulate vector and raster files. (Skill)

Visual Studies I: Assessment (Edited)

- Observe students' progression from simple to complex thinking as shown in sketches and completed projects. (Los: 1, 4, 7)
- Observe students' use and manipulation of computer hardware and software. (Los: 2, 3.11)
- Review students' portfolios for quality of documentation and editing as well as organization. (Los: 3,6)
- 4. Review student digital files for use/application of professional standards. (Los: 3)
- 5. Review students' drawing and modeling work focusing on their visual representation skills (2-D and 3-D). (Los: 3, 4, 5, 6, 7, 8, 9, 10, 11)
- 6. Observe the students' use of professional vocabulary during oral presentations. (Los: 4)

Visual Studies II: Edited

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- 1. Distinguish between types of drawing techniques and apply as appropriate in architectural contexts (Knowledge)
- Demonstrate understanding of computer hardware and software methods and standards as used in architectural practice (Knowledge and Skill)
- Demonstrate knowledge of graphic conventions and methods of digital file organization (Knowledge and Skill)
- 4. Communicate ideas and information through oral presentations. (Gen Ed)
- 5. Recognize and use design concepts and vocabulary (Gen Ed and Skill)
- Create digital 3-D models (including BIM) of medium geometric complexity and produce orthographic, axonometric, and perspective views. (Skill)
- 7. Create digital two-dimensional orthographic drawings. (Skill)
- 8. Manipulate vector and raster files. (Skill)
- 9. Create analogue and digital renderings. (Skill)
- 10. Perform form generating parametric modeling. (Skill)

Visual Studies II: Assessment (Edited)

- 1. Observe students' selection of drawing techniques. (Los: 1)
- 2. Observe students' progression from simple to complex thinking as shown in sketches and completed projects. (Los: 1, 4, 7)
- 3. Observe students' use and manipulation of computer hardware and software. (Los: 2, 6, 7, 8)
- Observe students' digital files for use/application of professional standards. (Los: 2.
 3)
- Review students' portfolios for quality of documentation and editing as well as organization. (Los: 3,6)
- 6. Review student digital files for use/application of professional standards. (Los: 3)
- 7. Review students' drawing and modeling work focusing on their visual representation skills (2-D and 3-D). (Los: 3, 4, 5, 6, 7, 8, 9, 10, 11)
- Observe the students' use of professional vocabulary during oral presentations. (Los. 4)

Site Planning: Edited

- Understand how climate, topography, hydrology, vegetation, and geology affect site design and building envelope, and enhance sustainability. (Knowledge)
- 2. **Define** and **compare** rating systems for evaluating sustainable planning. (Knowledge)
- 3. **Determine** the factors to produce a field study for a given site and **demonstrate** the ability to create a site plan. (Gen Ed)
- 4. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 5. **Develop** and **apply** professional vocabulary. (Gen Ed)
- 6. Research and practice information literacy skills by researching precedents. (Gen Ed)
- 7. Apply quantitative analysis to design. (Gen Ed)
- 8. Grade a site using cut and fill to alter existing contours. (Skill)
- 9. Apply zoning concepts and restrictions including OSR and FAR. (Skill)
- 10. **Develop** a landscape plan using different plant and ground cover materials. (Skill)

Site Planning: Assessment (Edited)

- Review students' design project (site plan) for effective incorporation of sustainable concepts and building envelope. (Los: 1, 3, 7, 8, 9, 10)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los. 4,
- Review students' written work regarding comparisons of different sustainable assessment systems. (Los: 2, 4, 5, 6)

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 Review students' design project and exams for proficiency in applying quantitative analysis to design (grading, cut and fill calculations) and zoning calculations. (Los: 1, 3, 7, 8, 9)

Environmental Systems For Architects: Edited

- 1. Understand different building environmental control systems to a building. (Knowledge)
- 2. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 3. **Develop** and **apply** professional vocabulary. (Gen Ed)
- 4. Research and practice information literacy skills by researching precedents. (Gen Ed)
- 5. Apply quantitative analysis to design. (Gen Ed)
- 6. Prepare simple riser diagrams for plumbing supply and waste systems. (Skill)
- 7. Select appropriate general and emergency lighting for buildings. (Skill)
- 8. Select appropriate heating, cooling and ventilation systems for buildings. (Skill)
- 9. **Select** appropriate fire suppression systems for buildings. (Skill)
- 10. Compute heat loss and heat gain for specific construction systems. (Skill)

Environmental Systems for Architects: Assessment (Edited)

- Review students' design project for effective incorporation of building environmental control systems and ability to draw a riser diagram, and compute heat loss and gain for specific construction systems. (Los: 1, 5, 6, 7, 8, 9, 10)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los: 2, 3)
- 3. **Review** students' written work and exams for proficiency in comparing different systems and applying professional vocabulary. (Los: 1, 2, 3, 4)
- Review students' design and exams for proficiency in using quantitative analysis to solve problems including but not limited to: water pressure, heat loss, and material expansion problems.(Los: 5, 10)
- 5. **Review** students' precedent research for proficiency in information literacy. (Los: 2, 3, 4)

Building Performance Workshop: Edited

- 1. Understand and apply alternative energy sources to a building. (Knowledge)
- Explain the design considerations unique to sustainable building design and demonstrate the applicability of each. (Knowledge)
- Demonstrate familiarity with Leadership in Energy and Environmental Design (LEED). (Knowledge)
- 4. Explain the economics of sustainability and demonstrate the differences between material and building system choices and life cycle costing. (Knowledge)
- Identify and select different building materials based on their source, processing, and science. (Gen Ed)
- 6. Communicate ideas and information both verbally and through writing. (Gen Ed)
- 7. **Develop** and **apply** professional vocabulary. (Gen Ed)
- 8. Research and practice information literacy Skills by researching precedents. (Gen Ed)
- 9. Apply quantitative analysis to design. (Gen Ed)
- 10. **Execute** building performance analysis using current technologies to evaluate and provide alternative for envelope performance and energy usage. (Skill)

Building Performance Workshop: Assessment (Edited)

- Review students' design project for effective incorporation of sustainable strategies including but not limited to: alternative energy sources, LEED, life cycle costing, and material choice. (Los: 1, 2, 3, 4, 5, 10)
- Observe the students' use of professional vocabulary during oral presentations. (Los: 2, 4, 6, 7, 8)

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- Review students' written work and exams for proficiency in comparing different systems and applying professional vocabulary. (Los: 1, 2, 3, 4, 5, 6, 7, 8, 10)
- Review students' design and exams for proficiency in using quantitative analysis. (Los: 4, 9)
- Review students' precedent research for proficiency in information literacy. (Los: 2, 3, 4, 5, 8)
- Review students' ability to execute performance analysis using current technologies to evaluate and provide alternatives for envelope performance and energy usage. (Los: 10)

Building Technology I: Edited Learning Objectives

- Understand the relationship of technology to tectonics and architectural character. (Knowledge)
- Understand and recall the key terms, properties, and fabrication techniques of the materials reviewed in the lectures and readings. (Gen Ed)
- Develop and apply a professional vocabulary of architectural terminology. (Gen Ed)
- Recall and recite the environmental implications of specific materials and types of construction. (Gen Ed)
- Sketch and draft details in orthographic and 3D views in analog and digital media. (Skill)
- 6. Develop analog and digital models of construction assemblies. (Skill)
- 7. Survey existing conditions (Skill)
- 8. Analyze assemblies and details through research and visual observation. (Skill)
- Develop a coordinated drawing set (plans, section, elevations, details) of a wood and/or masonry structure. (Skill)

Building Technology I: Assessment (Edited)

- 1. **Review** of a research assignment focused on the analysis of assemblies and details and the relationship of technology to tectonics and architectural character. (Los: 1, 8)
- 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. (Los: 2, 4)
- 3. **Review** students' drawing and modeling work by means of frequent pinups where students must exhibit their visual representation skills (2-D and 3-D). (Los: 5, 6, 9)
- 4. Observe the students' use of professional vocabulary during oral presentations. (Los: 3)
- Review students' field notes and final drawings for accuracy in documenting existing conditions. (Los: 3, 7)
- 6. **Review** student submissions for quality of drafting including use of line weights, lettering, and proper use of scale. (Los: 5, 7, 9)
- 7. Confirm the proper coordination of the students' submitted drawing sets. (Los: 9)
- 8. **Review** the quality and accuracy of the students' submitted analogue and digital models of construction assemblies. (Los: 6, 8)

Building Technology II: Edited

- Understand the relationship of technology to tectonics and architectural character. (Knowledge)
- Understand and recall the key terms, properties, and fabrication techniques of the materials reviewed in the lectures and readings. (Gen Ed)
- 3. **Develop and apply** a professional vocabulary of architectural terminology. (Gen Ed)
- Define and compare the environmental implications of specific materials and types of construction including embodied energy, sourcing, and the processing of materials. (Gen Ed)

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- Generate clear and concise talking points to guide oral presentations of lab assignments. (Gen Ed)
- Sketch and draft details in orthographic and 3D views in analogue and digital media. (Skill)
- 7. Develop analog and digital models of construction assemblies. (Skill)
- 8. **Analyze** assemblies and details; **demonstrate** an understanding of fundamental construction types both by detailed research and visual observation. (Skill)
- Demonstrate knowledge of professional construction drawing standards for composition, title blocks, annotation, and schedules. (Skill)
- Develop a coordinated drawing set including plans, elevations, sections, and details that illustrate and identified materials and construction types. (Skill)

Building Technology II: Assessment (Edited)

- 1. **Review** of a research assignment focused on the analysis of assemblies and details and the relationship of technology to tectonics and architectural character. (Los: 1, 8)
- 2. **Test** the students' ability to recall and recite the key terms and material of the readings and lectures through weekly guizzes and a final exam. (Los: 2, 4)
- 3. Review students' drawing and modeling work by means of frequent pinups where students must exhibit their visual representation skills (2-D and 3-D). (Los: 5, 6, 7, 9, 10)
- 4. Observe the students' use of professional vocabulary during oral presentations. (Los: 3)
- Review student submissions for quality of drafting including use of line weights, lettering, and proper use of scale. (Los: 6, 9, 10)
- 6. **Confirm** the proper coordination of the students' submitted drawing sets. (Los: 10)
- 7. **Review** the quality and accuracy of the students' submitted analogue and digital models of construction assemblies. (Los: 6, 7)

Building Technology III: Edited

- 1. **Understand** the process and requirements of developing a design from a schematic concept into design development drawings. (Knowledge)
- 2. Execute work through a collaborative process (Gen Ed)
- Generate clear and concise talking points to guide oral presentations of lab assignments. (Gen Ed)
- Understand the advantages of BIM (building information modeling) as a tool for design development and project delivery. (Skill)
- Apply knowledge of materials and methods of construction, including sustainable principles, to the development of details and assemblies.
- Sketch and draft details in orthographic and 3-D views in analogue and digital media. (Skill)
- Design and analyze an exterior wall system based on environmental performance.
- 8. Apply knowledge of professional construction drawing standards for page composition, title blocks, annotation, and schedules. (Skill)
- Develop a professional quality coordinated, edited, and organized set of design development documents for a given building design using BIM and CAD. (Skill)

Building Technology III: Assessment (Edited)

- Review students' drawing and modeling work by means of frequent pinups where students must exhibit their visual representation skills (2-D and 3-D). (Los: 6, 8, 9)
- Observe the students' use of professional vocabulary during oral presentations. (Los: 3)
 Meet with student teams frequently and review the effectiveness of their organization
- Meet with student teams frequently and review the effectiveness of their organization and management of the project work. (Los: 2)
- 4. Review the student submissions for the efficient and effective use of BIM tools. (Los: 4)

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- 5. Confirm the proper coordination of the students' submitted drawing sets. (Los: 9)
- Review the quality and accuracy of the students' submitted analogue and digital models of construction assemblies (Los: 6, 7)
- 7. **Review** the effectiveness of the design and the accuracy of the analysis of the environmental performance of the submitted exterior wall system. (Los: 5, 7)
- Compare the content and quality of final submission of the design development set to, professional standards. (Los 1, 8, 9)

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Building Technology IV: Edited

- Understand the parameters involved in the development of construction documents.
 (Knowledge)
- Research and report on the best practices for the assembly of selected materials. (Gen Ed)
- Generate clear and concise talking points to guide oral presentations of research report. (Gen Ed)
- 4. Execute work through a collaborative process (Gen Ed)
- Apply knowledge of materials and methods of construction, including sustainable principles to the development of details and assemblies for the given design.
- Sketch and draft details in orthographic and 3-D views in analog and digital media. (Skill)
- Demonstrate proficiency in using BIM and CAD to generate architectural plans, elevations, sections, details, and schedules. (Skill)
- Develop a professional quality coordinated, edited, and organized set of construction documents for a given building design using BIM and CAD. (Skill)
- 9. **Perform** analysis of a building enclosure. (Skill)

Building Technology IV: Assessment (Edited)

- 1. Review students' drawing and modeling work focusing on their visual representation skills (2-D and 3-D). (Los: 6, 7)
- 2. Observe the students' use of professional vocabulary during oral presentations. (Los:3)
- Review of a research assignment and presentation focused on the best practices for the assembly of a building enclosure. (Los: 2, 5)
- Meet with student teams frequently and review the effectiveness of their organization and management of the project work. (Los: 4)
- Review the students' digital files for the efficient and effective use of BIM & CAD tools. (Los: 7)
- 6. Confirm the proper coordination of the students' submitted drawing sets. (Los: 8)
- Review the students' analysis of the building enclosure and the students' application of the analytical data to the design. (Los: 5, 9)
- Compare the content and quality of the final construction document set to professional standards. (Los 1, 8)

History of Architectural Technology: Learning Objectives (Edited)

- Comprehend architecture as an artistic endeavor and as a response to human needs. (Knowledge)
- Understand architecture in the context of its geopolitical, economical, social, cultural and technological trends. (Knowledge)
- Develop a vocabulary of architectural terms and use it to describe buildings. (Gen Ed)
- 4. **Communicate** ideas & information both verbally and through writing. (Gen Ed)
- Identify paradigm plans and elevations of significant buildings. (Knowledge and Skill)

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6. Analyze proportion, scale, and rhythm in paradigm buildings. (Skill)

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History of Architectural Technology: Assessment (Edited)

 Test the students' ability to recall and recite the key terms and material of the readings and lectures through weekly quizzes, midterm and a final exam. (Los: 1, 2, 3, 4, 5, 6)

Review the students' understanding of the development of architecture from pre-history through to the 19th century in their weekly written assignments. (Los: 1, 2, 3, 4, 6)

 Observe the students' use of professional vocabulary in the written work and during class discussions. (Los: 3) **Deleted:** Evaluate

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History of Contemporary Architecture: Learning Objectives (Edited)

 Understand architecture in the context of its geopolitical, economical, social, cultural and technological trends. (Knowledge)

 Apply the vocabulary of architectural criticism to contemporary buildings. (Gen Ed)

3. Analyze (compare and contrast) contemporary buildings. (Gen Ed)

4. Communicate ideas and information both verbally and through writing. (Gen Ed)

 Research and distinguish information necessary for thesis-driven papers. (Gen Ed and Skill)

History of Contemporary Architecture: Assessment (Edited)

1. **Test** the students' ability to recall and recite the key terms and material of the readings and lectures through quizzes, midterm and a final exam. (Los: 1, 2, 3, 4, 5)

Review the students' understanding of the development of contemporary architecture in their written assignments and oral presentations. (Los: 1, 2, 3, 4)

Observe the students' use of professional vocabulary in the written work and during class discussions and oral presentations. (Los: 3) Formatted: Bullets and Numbering

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