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This course, integral to a three-semester sequence, delves into the pivotal aspects of building design, with a specific emphasis on designing vertical and horizontal circulation systems that accommodate individuals with disabilities, as well as on the intricacies of roofing systems, including their structural and construction elements. Echoing its first-semester counterpart, it dedicates considerable time to practical application. Accordingly, each class session is meticulously crafted to include a blend of drafting and sketching exercises, classwork, and workshops, all of which are strategically aligned to enrich the theoretical study of architectural construction details. Additionally, homework assignments are carefully designed to further consolidate this understanding through practical application.

Course Objectives:

- 1- **To Develop Comprehensive Design Skills in Vertical and Horizontal Circulation Systems:** Students will gain the ability to design inclusive vertical and horizontal circulation systems that are accessible to individuals with disabilities. This objective encompasses understanding the principles of universal design and applying these principles to create spaces that are navigable and user-friendly for all occupants.
- 2- **To Master the Design and Construction of Roof Systems:** Students will achieve proficiency in the architectural design of roof systems, including an in-depth understanding of their structural components and construction techniques. This will involve learning about various roofing materials, methods of construction, and the integration of these systems into overall building design to ensure functionality, durability, and aesthetic coherence.
- 3- **To Enhance Practical Skills Through Hands-on Application:** Through a series of drafting and sketching exercises, classwork, workshops, and homework assignments, students will refine their practical skills in architectural design and construction detailing. This objective aims to bridge the gap between theoretical knowledge and practical application, enabling students to produce detailed architectural plans and models that accurately reflect their design intentions and comply with architectural standards

Course Content:

As part of three semester course, this course concentrates on design principles of vertical/horizontal circulation systems (ramps, stairs, escalators, elevators, etc.), roofing, roof components, roof structure and roof construction with detailing.

Learning Outcomes:

- 1- **Identify the Fundamental Principles of Vertical and Horizontal Circulation Systems:** Students will gain the ability to recognize the core principles underlying vertical and horizontal circulation systems, including the design of these systems with a focus on accessibility for individuals with disabilities.
- 2- **Design Roofing Systems and Develop Various Solutions:** Participants will acquire the skills to design roofing systems, capable of conceptualizing and developing diverse solutions to address various architectural needs and challenges.
- 3- **Accurately Draft Basic Building Components and Construct Scale Models:** Learners will be proficient in drawing all fundamental building components at the correct scale and creating detailed models to represent their designs physically

Academical Ethics(*):

In the combined educational and learning process of this course, it is imperative to adhere to the following academic behaviors:

- **Maximize Respect for the Educational Opportunities of Others:** Each participant should respect others' rights to benefit fully from educational opportunities, fostering an environment of mutual respect and inclusivity.
- **Uphold Academic Integrity:** Do not present anyone else's work as your own. Every piece of work from another source must be appropriately cited to acknowledge the original author.
- **Demonstrate Responsibility in Group Work:** When working in groups, it is crucial to be accountable to your team members, ensuring equitable contribution and collaboration.
- **Commit to Timely and Complete Participation:** Engage in all scheduled activities punctually and with full dedication, contributing positively to the collective learning experience.
- **Value Contributions and Acknowledge Success:** Recognize and appreciate the efforts and achievements of others, promoting an atmosphere of support and encouragement.
- **Prioritize Honesty and Openness:** The cornerstone of academic and personal growth is maintaining integrity and being open-hearted in all dealings within the course

Opposite behaviour may cause failure and disciplinary executions.

*(*adopted from Prof.Dr. Selahattin Önür 's work on academic ethics.*

Equipment List:

For a course encompassing both hand drawing and computer-based drawing within the field of architectural design, a comprehensive equipment list is essential to ensure students have the necessary tools for all aspects of their coursework. Below is a detailed list categorized by hand drawing and computer-based drawing requirements:

Hand Drawing Equipment:

1. **Drawing Pencils:** A range of hardness (2H to 6B) for different shading techniques and precision.
2. **Erasers:** Kneaded and plastic erasers for varied erasing techniques.
3. **Drawing Paper:** Quality sketch pads and tracing paper of various sizes.
4. **Drafting Table:** Adjustable for comfort and posture during extended drawing sessions.

5. **T-Square and Ruler:** For creating precise lines and measurements.
6. **Set Squares:** A pair of triangles (one 45° and one 30°/60°) for drawing accurate angles.
7. **Compass and Dividers:** For drawing circles and measuring distances accurately.
8. **Drafting Brush:** To keep drawings clean from eraser residue and pencil shavings.
9. **Scale Ruler:** For drawing and interpreting scale drawings accurately.
10. **Materials and equipments to make models :** (Modeling knife, Cutting Pad, Steel Ruler, Glue, cardboard, corrugated cardboard etc.)
11. **Portfolio Case:** To store and transport drawings and materials.

Computer-Based Drawing Equipment:

1. **Computer:** A laptop or desktop with sufficient processing power and a high-quality graphics card to run design software smoothly.
2. **Design Software:** Licenses for industry-standard software such as AutoCAD, Revit, SketchUp, and Adobe Creative Suite.
3. **Graphics Tablet:** With a stylus for intuitive sketching and drawing directly into design software.

SCHEDULE

Week 1 / 20 February 2024

Introduction,

Revising knowledge of construction of the previous courses, (Frame Systems and Slabs)

Vertical and horizontal circulation components (ramps, stairs, escalators, elevators, etc.)

Week 2 / 27 February 2024

Vertical and horizontal circulation components (ramps, stairs, escalators, elevators, etc.)

Homework1 (Delivery)

Week 3 / 05 March 2024

Classifying stairs due to Typological and Technological Properties,

Stair Components

Homework1 (1st Submission)

Week 4 / 12 March 2024

Classifying stairs due to Typological and Technological Properties,

Stair Components

Homework1 (2nd Submission)

Week 5 / 19 March 2024

Balancing the stairs

Homework1 (3rd Submission)

Week 6 / 26 March 2024

Detailing about stairs

Homework1 (Model Making)

Week 7 / 02 April 2024

Detailing about stairs

Homework1 (Poster Submission)

Week 8 / 09 April 2024

Workshop 1 (Reciprocal Systems)

Week 9 / 16 April 2024

Roof Systems :(Typological and Technological Properties, Timber Roof Components)

Roof Systems :Timber Roofs : Single Pitch, Double Pitch , Hipped Roof Systems)

Forming roofs,

Timber Roofs : Wood Trusses, Wood Trussed Rafters

Workshop 1

Week 10 / 23 April 2024 (National Day - OFF Day)

Week 11 / 30 April 2024

Roof Systems :(Typological and Technological Properties, Timber Roof Components)

Roof Systems :Timber Roofs : Single Pitch, Double Pitch , Hipped Roof Systems)

Forming roofs,

Timber Roofs : Wood Trusses, Wood Trussed Rafters

Homework2 (Delivery)

Week 12 / 07 May 2024

Timber Roofs : Wood Trusses, Wood Trussed Rafters

Detailing about roofs

Flat Roof Systems

Homework2(1st Submission)

Week 13 / 14 May 2024

Structural Steel Roof Framing

Homework2 (2nd Submission)

Week 14 / 21 May 2024

Structural Steel Roof Framing

Space Frames

Homework2 (Final Submission)

Week 15 / 28 May 2024

Space Frames

Homework2 (Model Making)

FINAL

04 June 2024 (Final Poster Submission)

80% attendance to this course is compulsory.

HOMEWORK

HW 01 : Stairs (1/20, 1/10, 1/5, 1/2, 1/1) / (40%)

: Stairs detail drawings in various scales (1/10, 1/2, 1/1) /

Due Date :...../...../2024 until 09:00

HW 02: Roof system modulation and system sections (1/20, 1/10, 1/5, 1/2, 1/1) (/ 30%)

Due Date :...../...../2024 until 09:00

FINAL WORK-Poster): Roof system details (1/20, 1/10, 1/5, 1/2, 1/1) / (30%)
(The details and submission date for final work will be announced during semester)

WORKSHOP

W01: Reciprocal Frames (Physical Model Making) %10 (Bonus)

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Journals:

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