湖北工業大學
HUBEI UNIVERSITY OF TECHNOLOGY

Course Title	Material Systems and Spatial Construction
Course Code	DESN 2322
Semester	Summer 2026
Course Length	4 Weeks, 60 Contact Hours
Credits	4
Instructor	TBA
Office	TBA
Email	TBA
Prerequisite	Completion of first-year foundation studio coursework.

Course Description:

How do designers transform ideas into physical experiences? How do materials, structures, and spatial relationships shape the way people interact with the built and sensory world? Material Systems and Spatial Construction introduces students to the processes of three-dimensional thinking and physical making through experimentation, construction, and spatial investigation. Students explore how concepts become material forms through techniques such as folding, joining, interlocking, layering, nesting, suspension, casting, and modular assembly.

The course investigates the relationship between material properties, physical forces, and spatial perception. Students work with a range of materials including paper, cardboard, wood, fabric, found objects, recycled materials, and mixed media while examining qualities such as texture, flexibility, transparency, durability, weight, balance, and resistance. Through iterative experimentation and hands-on construction, students learn how gravity, structure, tension, compression, and movement influence physical form and spatial experience.

Material Systems and Spatial Construction explores multiple understandings of space, including tactile and sensory space, inhabited and architectural space, and social and environmental space. Students examine how material choices influence human interaction, accessibility, sustainability, and cultural meaning within contemporary art and design practices. Studio projects emphasize process-based learning, encouraging experimentation, risk-taking, revision, and learning through failure.

Discussion, critique, reflective writing, and collaborative analysis support the development of a studio community centered on dialogue, experimentation, and idea-sharing. Students contextualize their work through historical, cultural, ecological, and contemporary references while developing confidence in material exploration, spatial reasoning, and creative problem-solving within interdisciplinary design practice.

Course Goals:

Students who successfully complete this course will demonstrate competency in the following general education core goals:

- **Critical Thinking Skills** – Students will engage in analytical thinking, demonstrating the ability to critically evaluate, synthesize, and apply knowledge to complex problems, and construct well-reasoned solutions and arguments.
- **Independent Research and Inquiry** – Students will conduct independent research, utilizing academic resources to explore relevant topics, formulating research questions, analyzing data, and presenting findings in a coherent, scholarly manner.
- **Problem-Solving and Application** – Students will apply theoretical concepts and methodologies learned in the course to real-world problems, demonstrating the ability to develop practical solutions informed by academic inquiry.
- **Global and Cultural Awareness** – Students will gain awareness of the global and cultural contexts relevant to the course, appreciating diverse perspectives and considering the implications of their studies in a broader, international context.

Student Learning Outcomes:

Upon completion of this course, students will be able to:

- Apply foundational construction techniques including folding, joining, interlocking, layering, and modular assembly;
- Analyze how gravity, force, balance, tension, and resistance influence three-dimensional structures;
- Experiment with material properties including texture, flexibility, transparency, durability, and weight;
- Develop spatial compositions that engage tactile, visual, and sensory perception;
- Translate two-dimensional concepts into three-dimensional forms and environments;
- Construct prototypes and models using iterative experimentation and revision;
- Evaluate the environmental and social implications of material choices in art and design;
- Communicate spatial ideas effectively through sketches, models, presentations, critiques, and reflective writing;
- Participate constructively in collaborative studio dialogue and critique;
- Demonstrate increased confidence in material investigation, spatial reasoning, and physical making processes.

Textbooks/Supplies/Materials/Equipment/ Technology or Technical Requirements:

Lupton, Ellen and Jennifer Cole Phillips. *Graphic Design: The New Basics.*
Pallasmaa, Juhani. *The Eyes of the Skin: Architecture and the Senses.*
Lidwell, William, Kritina Holden, and Jill Butler. *Universal Principles of Design.*
Selected essays, exhibition catalogs, videos, and multimedia resources will be provided.

Course Requirements:

Material Experiments and Process Studies (20%)
Students complete a series of hands-on exploratory exercises investigating structural systems, material behaviors, sensory qualities, and construction techniques through iterative making and testing.

Reflective Journal and Process Documentation (15%)
Students maintain an ongoing visual and written journal documenting observations, sketches, construction experiments, critique reflections, material tests, and process development throughout the course.

Reading Responses and Studio Discussions (10%)
Students complete written and verbal responses to readings, participate actively in discussions and critiques, and contribute thoughtfully to collaborative studio dialogue.

Spatial Construction Project I (15%)
Students develop a small-scale spatial investigation focused on tactile experience, structure, and material interaction through iterative prototyping and presentation.

Spatial Construction Project II (20%)
Students create a larger inhabitable or environmental spatial project examining movement, scale, sensory engagement, and spatial relationships within social or ecological contexts.

Final Spatial Installation Project (15%)
Students synthesize course concepts into a final three-dimensional installation or material system demonstrating experimentation, conceptual development, craftsmanship, and critical reflection.

Attendance and Engagement (5%)
Students are expected to attend all sessions, contribute actively to critiques and collaborative activities, and participate respectfully within the studio learning environment.

Assessments: Activity	**Percent Contribution**
Material Experiments and Process Studies	20%
Reflective Journal and Process Documentation	15%
Reading Responses and Studio Discussions	10%
Spatial Construction Project I	15%
Spatial Construction Project II	20%
Final Spatial Installation Project	15%
Attendance and Engagement	5%

Grading:

Final grades will be based on the sum of all possible course points as noted above.

Grade	**Percentage of available points**
A	94-100
A-	90-93

B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
D	64-69
D-	60-63
F	0-59

Course Schedule:
The schedule of activities is subject to change at the reasonable discretion of the instructor. Minor changes will be announced in class, major ones provided in writing.

DESN 2322 Schedule		
Lecture	Topic	Readings
L1	Introduction to Material Systems and Spatial Construction	Course Reader
L2	From Concept to Object: Three-Dimensional Thinking	Lupton Introduction
L3	Material Properties and Sensory Experience	Pallasmaa Ch.1
L4	Folding, Cutting, and Surface Transformation	Supplemental Readings
L5	Joining, Fastening, and Structural Connections	Universal Principles of Design
L6	Balance, Weight, and Gravity in Construction	Selected Essays
L7	Tension, Compression, and Structural Systems	Supplemental Readings
L8	Texture, Touch, and Haptic Experience	Pallasmaa Ch.2
L9	Modular Systems and Repetition	Lupton Selections
L10	Space, Movement, and Human Interaction	Multimedia Sources
L11	Experimentation Through Failure and Revision	Supplemental Readings
L12	Spatial Construction Project I Workshop	Independent Studio Work
L13	Midterm Critiques and Discussion	Review Materials
L14	Architecture, Body, and Inhabited Space	Pallasmaa Ch.3
L15	Environmental and Sustainable Materials	Selected Articles
L16	Social Space and Public Interaction	Supplemental Readings
L17	Light, Transparency, and Spatial Perception	Multimedia Sources
L18	Installation, Display, and Site Context	Universal Principles of Design
L19	Sound, Movement, and Multi-Sensory Experience	Supplemental Readings
L20	Material Narratives and Cultural Meaning	Selected Essays
L21	Collaborative Spatial Systems	Independent Research
L22	Final Installation Project Development	Studio Consultations
L23	Documentation and Presentation Strategies	Digital Resources
L24	Final Critique Preparation	Course Reader
L25	Final Presentations and Reflective Discussion	Final Review

Accommodation Statement:

Academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring

such needs to the instructor's attention, as he/she is not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow.

Academic Integrity Statement

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in coursework may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or outside the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Other Items:

Attendance and Expectations

All students are required to attend every class, except in cases of illness, serious family concerns, or other major problems. We expect that students will arrive on time, be prepared to listen and participate as appropriate, and stay for the duration of a meeting rather than drift in or out casually. In short, we anticipate that students will show professors and fellow students maximum consideration by minimizing the disturbances that cause interruptions in the learning process. This means that punctuality is a must, that cellular phones be turned off, and that courtesy is the guiding principle in all exchanges among students and faculty. You will be responsible for the materials and ideas presented in the lecture.

Assignment Due Dates

All written assignments must be turned in at the time specified. Late assignments will not be accepted unless prior information has been obtained from the instructor. If you believe you have extenuating circumstances, please contact the instructor as soon as possible.

Make-Up Work

The instructor will not provide students with class information or make-up assignments/quizzes/exams missed due to an unexcused absence. Absences will be excused and assignments/quizzes/exams may be made up only with written documentation of an authorized absence. Every effort should be made to avoid scheduling appointments during class. An excused student is responsible for requesting any missed information from the instructor and setting up any necessary appointments outside of class.

Access, Special Needs, and Disabilities

Please notify the instructor at the start of the semester if you have any documented disabilities, a medical issue, or any special circumstances that require attention, and the school will be happy to assist.