2208-ARCH-3323/5323-001/900: Construction Materials and Methods
Fall 2020

Instructor Information

Instructor
Narjes Abbasabadi, Ph.D., Assistant Professor

Office Number
CAPPA #415

Office Telephone Number
(817) 272-2801

Email Address
narjes.abbasabadi@uta.edu

Faculty Profile
https://mentis.uta.edu/explore/profile/narjes-abbasabadi

Office Hours
WF 11:30 AM – 12:30 PM by appointment

Teaching Assistant
Attalla Joudeh
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Course Information

Section Information
2208-ARCH-3323/5323-001/900-Construction Materials and Methods

Time and Place of Class Meetings
MWF 10:00 – 10:50 AM / Online 2 Synchronous.
We will use multiple platforms. The online sessions occur synchronously through Canvas, Microsoft Teams and Zoom. Canvas is the main communication platform for this course.

Prerequisite
Prerequisite: ARCH 2552. Junior standing in program. Restricted to Architecture majors. Minimum 2.8 GPAs both cumulative and within the major required.

Description of Course Content
This course explores the nature of materials, structural concepts, methods used in the construction process, and the criteria to assess those materials and systems against sustainability and environmental impact.

Student Learning Outcomes
Upon completion of this course, student will:

- Understand the principles and fundamentals of building construction materials and methods.
- Understand the project development process and construction delivery systems.
▪ Understand building standards and codes; and develop an understanding of the impact of materials and buildings on the environment and human health, safety, and welfare.

▪ Understand sustainability in construction, focusing on the environmental impacts associated with building materials and buildings.

▪ Develop an understanding of the material properties (structural properties of materials and performance properties).

▪ Develop an understanding of building enclosure performance and functional requirements (controlling heat, air, moisture transfer, etc.) and major cladding systems.

▪ Develop an understanding of the major materials and construction systems such as light wood frame, mass timber, and steel frame construction.

▪ Research and develop an understanding of emerging low carbon materials and systems and advanced technologies in building construction.

**Required Textbooks**


**Other References:**


Several references will be used during the course. Students do not need to purchase these materials. Additional reading materials and handouts from various publications/sources will be provided by the Instructor as needed.

**Descriptions of major assignments and examinations**

The major assignments and examinations for this course include reading assignments, regular tests, pop quizzes, homework, research and presentation, sketchbook assignments, and final exam.

▪ Tests / 4
▪ Pop Quizzes
▪ Research and Presentation
▪ Sketchbook Assignment / 4
▪ Final Exam

The breakdown of grades has been specified in the grading information section.
Technology Requirements
The course modality is Online 2, meaning that all instruction and testing occur online synchronously. We
will use multiple platforms during this course. The online sessions occur through Canvas, Microsoft
Teams, and Zoom. Canvas is the main communications platform for this course; assignments will be
submitted through Canvas; quizzes and exams will be through Canvas using LockDown Browser and
Respondus Monitor feature. You need to use a webcam and microphone with LockDown Browser and
Respondus Monitor.

Grading Information

Grading
Letter grade A / Excellent: a score of 90% or higher
Letter grade B / Good: a score of 80% to 89.5%
Letter grade C / Fair: a score of 70% to 79.5%
Letter grade D / Passing, Below Average: a score of 60% to 69.5%
Letter grade F / Failure: a score of less than 60%.

Breakdown of Grades
Tests (4 x 20) 80
Pop Quizzes (unspecified) 20
Research and Presentation 40
Sketchbook Assignments (4 x 10) 40
Attendance/Participation* 20
Final Exam 40

Total points 240

*Participation: Taking an active role in class is critical for student learning.

Expectations for Out-of-Class Study
A general rule of thumb for out-of-class study is for every credit hour earned, a student should spend 3
hours per week working outside of class. Therefore, a 3-credit course might have a minimum expectation
of 9 hours of course-related activities, including reading required materials, completing assignments,
preparing for exams, etc.

Grade Grievances
Any appeal of a grade in this course must follow the procedures and deadlines for grade-related
grievances as published in the current University Catalog.

For undergraduate courses, see Undergraduate Grading Policies; for graduate courses, see Graduate
Grading Policies. For student complaints, see Student Complaints.

The College of Architecture, Planning and Public Affairs (CAPPA) outlines: “It is the obligation of the
student to first make a serious effort to resolve the grade dispute with the student’s instructor. The
instructor has primary responsibility for assigning grades, and his or her judgment is final unless there is
evidence of discrimination, differential treatment or procedural irregularities.” If the student has attempted
to resolve the issue with the instructor without resolution, and there is evidence of discrimination,
differential treatment, or procedural irregularities, the student should complete the form and submit it with
any necessary supporting materials.

Course Schedule
As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the
educational needs of the students enrolled in this course. –Narjes Abbasabadi.

Schedule
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>W 8/26</td>
<td>Course Introduction</td>
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<tr>
<td></td>
<td>F 8/28</td>
<td>Making Buildings</td>
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<td>Week 2</td>
<td>M 8/31</td>
<td>Building Delivery Process</td>
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<td></td>
<td>W 9/2</td>
<td>Building Standards, Codes and Guidelines</td>
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<td></td>
<td>F 9/4</td>
<td>Building Standards, Codes and Guidelines – Due: Research Topics</td>
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<td>Week 3</td>
<td>M 9/7</td>
<td>Labor Day – No class</td>
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<td></td>
<td>W 9/9</td>
<td>Sustainability in Construction (Principals; Sustainable Materials/Methods)</td>
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<td></td>
<td>F 9/11</td>
<td>Sustainability in Construction (Sustainability Rating Systems)</td>
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<tr>
<td>Week 4</td>
<td>M 9/14</td>
<td><strong>Principals of Construction</strong></td>
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<td><strong>Properties of Materials</strong> (Structural and Performance Properties)</td>
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<td></td>
<td>W 9/16</td>
<td>Loads on Buildings</td>
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<td></td>
<td>F 9/18</td>
<td>Structural Properties of Materials</td>
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<td>Week 5</td>
<td>M 9/21</td>
<td>Structural Properties of Materials – Due: Research Draft 1</td>
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<td>W 9/23</td>
<td>Enclosure Performance &amp; Functional Requirements</td>
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<td></td>
<td>F 9/25</td>
<td>Enclosure Properties: Energy &amp; Thermal Performance; Controlling Heat Transfer</td>
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<td>Week 6</td>
<td>M 9/28</td>
<td>Enclosure Properties: Controlling Air &amp; Moisture penetration</td>
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<td>W 9/30</td>
<td>Enclosure Properties: Resisting Fire; Controlling Sound &amp; Light</td>
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<td></td>
<td>F 10/2</td>
<td>Enclosure Codes and Standards – Exam Review; Due: Research Draft 2</td>
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<td>Week 7</td>
<td>M 10/5</td>
<td><strong>Test 02</strong></td>
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<td><strong>Materials and Construction Systems</strong></td>
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<td>W 10/7</td>
<td>Construction Methodologies</td>
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<td>F 10/9</td>
<td>Construction Methodologies: Wrightwood 659/ Tadao Ando Project – Guest Lecture 01</td>
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<td>Week 8</td>
<td>M 10/12</td>
<td>Foundations and Sitework</td>
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<td>W 10/14</td>
<td>Foundations and Sitework</td>
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<td>F 10/16</td>
<td>Foundations</td>
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<td>Week 9</td>
<td>M 10/19</td>
<td>Wood – Due: Sketchbook 01</td>
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<td>W 10/21</td>
<td>Wood Products</td>
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<td>F 10/23</td>
<td>Mass Timber Construction – Exam Review</td>
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<td>Week 10</td>
<td>M 10/26</td>
<td><strong>Test 03</strong> – Due: Sketchbook 02</td>
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<td>W 10/28</td>
<td>Mass Timber Construction – Guest Lecture 02</td>
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<td>F 10/30</td>
<td>Wood Light Frame Construction</td>
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<td>Week 11</td>
<td>M 11/2</td>
<td>Wood Light Frame Construction – Due: Sketchbook 03</td>
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<td>W 11/4</td>
<td>Wood Light Frame Construction</td>
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<td></td>
<td>F 11/6</td>
<td>Exterior Finishes for Wood Frame Construction</td>
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<td>Week 12</td>
<td>M 11/9</td>
<td>Concrete Construction – Due: Sketchbook 04</td>
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<td>W 11/11</td>
<td>Concrete Construction</td>
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<td></td>
<td>F 11/13</td>
<td>Steel Frame Construction – Exam Review</td>
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<td>Week 13</td>
<td>M 11/16</td>
<td><strong>Test 04</strong></td>
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<td></td>
<td>W 11/18</td>
<td>Steel Frame Construction – Guest Lecture 03</td>
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<td>F 11/20</td>
<td>Enclosure: Cladding Systems</td>
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<td></td>
<td>W 11/25</td>
<td>Thanksgiving Holiday – No class</td>
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<tr>
<td></td>
<td>F 11/27</td>
<td>Thanksgiving Holiday – No class</td>
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<tr>
<td>Week 15</td>
<td>M 11/30</td>
<td>Low Carbon / Emerging Building Materials – Student Presentation</td>
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<td></td>
<td>W 12/2</td>
<td>Low Carbon / Emerging Building Materials – Student Presentation</td>
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<td></td>
<td>F 12/4</td>
<td>Low Carbon / Emerging Building Materials – Student Presentation</td>
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<tr>
<td>Week 16</td>
<td>M 12/7</td>
<td>Final Exam Review – <strong>Last Day of Class</strong></td>
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<td></td>
<td>F 12/11</td>
<td>Final Exam</td>
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</tbody>
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**Important Dates**

- Thanksgiving Holiday – No class
- Thanksgiving Holiday – No class
- Low Carbon / Emerging Building Materials – Student Presentation
- Low Carbon / Emerging Building Materials – Student Presentation
- Low Carbon / Emerging Building Materials – Student Presentation
- Final Exam Review – **Last Day of Class**
**Final Exam Day/Date/Time:**
Friday, Dec 11, 2020 (10:00 AM – 10:50 AM)

**Test Day/Date/Time:**
- Test 01: Monday, Sep. 14, 2020 (10:00 AM – 10:50 AM)
- Test 02: Monday, Oct. 05, 2020 (10:00 AM – 10:50 AM)
- Test 03: Monday, Oct. 26, 2020 (10:00 AM – 10:50 AM)
- Test 04: Monday, Nov. 16, 2020 (10:00 AM – 10:50 AM)

**Guest Lecture Day/Date/Time:**
- Guest Lecture 01: Friday, Oct. 09, 2020 (10:00 AM – 10:50 AM)
- Guest Lecture 02: Wednesday, Oct. 28, 2020 (10:00 AM – 10:50 AM)
- Guest Lecture 03: Wednesday, Nov. 18, 2020 (10:00 AM – 10:50 AM)

**Sketchbook Submission Due:**
- Sketchbook 01 submission: Monday, Oct. 19, 2020
- Sketchbook 02 submission: Monday, Oct. 26, 2020
- Sketchbook 03 submission: Monday, Nov. 02, 2020
- Sketchbook 04 submission: Monday, Nov. 09, 2020

**Academic Calendar:**
See academic calendar to verify the important dates/deadlines and find detailed information on them.

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**Institution Information**

UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the Institutional Information page (https://resources.uta.edu/provost/course-related-info/institutional-policies.php) which includes the following policies among others:

- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

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**Additional Information**

**Mandatory Face Covering Policy**
All students and instructional staff are required to wear facial coverings while they are on campus, inside buildings and classrooms. Students that fail to comply with the facial covering requirement will be asked to leave the class session. If students need masks, they may obtain them at the Central Library, the E.H. Hereford University Center’s front desk or in their department. Students who refuse to wear a facial covering in class will be asked to leave the session by the instructor, and, if the student refuses to leave, they may be reported to UTA’s Office of Student Conduct.

**Attendance**

At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. Each faculty member is free to develop his or her own methods of evaluating students’ academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have established the following attendance policy:

Students are required to attend class which is online synchronous. Also, taking an active role and participation in class discussions and activities is required and is critical for students learning. More than
two unexcused/unapproved absences will affect the final grade. The third absences will result in a one full grade reduction. Students are expected to be on time and remain in class for the duration of the course. Missing more than 30 minutes of class time will be considered absent.

While UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report must the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

Emergency Exit Procedures
Should we experience an emergency event that requires evacuation of the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, do not take an elevator but use the stairwells instead. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Success Programs
UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring by appointment, drop-in tutoring, etutoring, supplemental instruction, mentoring (time management, study skills, etc.), success coaching, TRIO Student Support Services, and student success workshops. For additional information, please email resources@uta.edu, or view the Maverick Resources website.

The IDEAS Center (https://www.uta.edu/ideas/) (2nd Floor of Central Library) offers FREE tutoring and mentoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

The English Writing Center (411LIBR)
The Writing Center offers FREE tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at the Writing Center (https://uta.mywconline.com). Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see Writing Center: OWL for detailed information on all our programs and services.

The Library’s 2nd floor Academic Plaza (http://library.uta.edu/academic-plaza) offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library’s hours of operation.

Librarian to Contact
Each academic unit has access to Librarians by Academic Subject that can assist students with research projects, tutorials on plagiarism and citation references as well as support with databases and course reserves.

Emergency Phone Numbers

In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911. Non-emergency number 817-272-3381.

Library Information
Research or General Library Help
Ask for Help
- Academic Plaza Consultation Services (library.uta.edu/academic-plaza)
- Ask Us (ask.uta.edu/)
- Research Coaches (http://libguides.uta.edu/researchcoach)
- Resources
- Library Tutorials (library.uta.edu/how-to)
- Subject and Course Research Guides (libguides.uta.edu)
- Librarians by Subject (library.uta.edu/subject-librarians)
- A to Z List of Library Databases (libguides.uta.edu/az.php)
- Course Reserves (https://uta.summon.serialssolutions.com/#!/course_reserves)
- Study Room Reservations (openroom.uta.edu/)