Introduction to the Technology of Architecture (ARC 2470) is an introductory course for undergraduate Architecture students and there are no prerequisites other than admittance to the architecture program. Students will take additional courses which cover these areas in more depth later in the curriculum. The ability to master these courses will be enhanced by a thorough understanding of the content covered in this course.

The basic concepts of the three areas of architectural technology are covered:
- Environmental Technology
- Materials & Methods of Construction
- Structures in Architecture

As well as:
- Sustainable Construction and Design (Green Building and Sustainability issues)
- Building Science
- Passive Design

**NAAB Accreditation Criteria to be met by ARC 2470 Introduction to the Technology of Architecture:**

**Realm A: Critical Thinking and Representation**
- **A.3 Investigative Skills**: to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment.
- **A.6 Use of Precedents**: to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about the incorporation of such principles into architecture and urban design projects.

**Realm B: Integrated Building Practices, Technical Skills and Knowledge**
- **B.3 Codes and Regulations**: to design sites, facilities, and systems that are responsive to relevant codes and regulations and include the principles of life-safety and accessibility standards.
- **B.5 Structural Systems**: to demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.
- **B.6 Environmental Systems**: to demonstrate the principles of environmental systems design, how design criteria can vary by geographic region, and the tools used for performance assessment. This demonstration must include active and passive heating and cooling, solar geometry, daylighting, natural ventilation, indoor air quality, solar systems, lighting systems, and acoustics.
- **B.7 Building Envelope Systems and Assemblies**: of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.
- **B.9 Building Service Systems**: of the basic principles and appropriate application and performance of building service systems, including lighting, mechanical, plumbing, electrical, communication, vertical transportation, security, and fire protection systems.

The National Architectural Accreditation Board (NAAB) criteria maybe viewed [www.famusoa.net](http://www.famusoa.net) web site.

All the concepts and ideas learned in this course are relevant to and should be applied in the design studio. Future design efforts must incorporate what is learned here. The instructor will participate in design studio pin-ups and juries as much as possible to help reinforce the application of course concepts. You are encouraged to seek critiques of your studio work from the professor and other faculty. Strive to learn as much as possible on ways this course can inform your design. There
are many excellent resources and websites your instructor can recommend including [www.buildingreen.com](http://www.buildingreen.com), a web site with a wealth of building related information which we will review in class. Students have access to this site while on the university wireless system.

This is a lecture course which uses images and data to reinforce content. **Active student participation is required.** Not all material (images or information) covered in the lectures is part of the reading and vice versa, but may be a part of an exam and/or pop quiz. Students must do the required reading before coming to class in order to gain a full understanding of the lectures and be able to ask questions about the readings. Supplemental reading will be on reserve in the library, as well as on Blackboard. Lectures are not posted to Blackboard. Pay attention in class and take notes. Taking photos during class of slides is disruptive, take notes instead and do the reading!!!

The concepts and applications contained in the lectures and readings will be further researched in three out-of-class projects and class presentations. A **minimum** of four to six hours of time should be set aside per week for reading and project work. Some students may **require** more time, and some less. In addition to tuition and text expenses, students may have costs for class projects. The research, time and effort put into projects will be part of your project grade.

This course has five primary objectives –

1. To develop an understanding of the basic principles of ecology, and the architect’s responsibilities with respect to environmental and resource conservation in the design of buildings and communities.
2. To develop an ability to **respond to natural and built site characteristics** in the development of a program and design of a building.
3. To develop an understanding of the basic principles of building structures in withstanding gravity and lateral forces, and the types of structural systems commonly employed in different applications, building types, and other circumstances.
4. To develop an understanding of the basic principles that inform the design of environmental systems, including heating, cooling, lighting, and acoustics.
5. To develop an understanding of the basic principles which inform the design of building envelope systems.

**Course Outcomes:** Relative to the major building systems to be explored and understood in this course, the student should be able to:

- Recognize and begin to minimize the **ecological impacts of your designs**, while maximizing the potential design opportunities of your sites.
- Apply knowledge about the **basic environmental technology principles** to appropriate aspects of your studio projects in such areas as daylighting, ventilation, and solar orientation.
- Recognize and use to your advantage the characteristics of major structural and construction systems.
- Apply knowledge about **basic building technologies** to common building design conditions encountered in your studio projects.

**Readings** and study materials will be on reserve in the School of Architecture library or posted on Blackboard. Several books will be referenced in this course and will be on reserve in the library.

**Required Text:**

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<th>Author(s)</th>
<th>Title</th>
<th>ISBN</th>
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**Recommended References:**

- Alison Kwok, Walter Grondzik | *The Green Studio Handbook* (available in library as E-book) |
- Porter, Tom | *Archispeak: An Illustrated Guide to Architectural Terms* |
- Lewis, Elizabeth | *Sustainaspeak: A Guide to Sustainable Design Terms* |

**Performance Evaluation:** Four interim tests and one final exam are scheduled in the syllabus. The first four tests cover the course materials immediately preceding each test. The final examination covers all course materials and is divided into 4
sections. Students must pass the final exam to pass the course. As an incentive to study and read, students who earn an A grade on a test will have that number grade plugged into that section of the final exam and will not need to take that portion of the final exam. If a student gets an A grade on all tests, then the student will not have to take the final exam and will get an A grade for the final exam. Verbal test reviews will be given in the class prior to the test date (not posted on Bb).

In addition, student projects will be used to evaluate student learning in this course. Unannounced quizzes may be given as an incentive to having students read the assigned material before class lectures are given. Homework is due at the beginning of class. Class participation - in the form of attendance and interaction with the class and instructor is important. The approximate percentage weight (subject to change) of these items is as follows:

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<tr>
<th>Item</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Test One</td>
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<td>Test Three</td>
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<td>Test Four</td>
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<tr>
<td>Final Exam</td>
<td>20%</td>
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<tr>
<td>Projects 1, 2 &amp; 3 (10% each)</td>
<td>30%</td>
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<tr>
<td>Participation/Attend/Quizzes</td>
<td>10%</td>
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<td>100%</td>
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Percentage scores on exams and final grade averages will be translated to letter grades as follows:

- 90 - 100 % A
- 80 - 89 % B
- 70 - 79 % C
- 60 - 69 % D
- below 60% F

Projects: Projects must be submitted in a neat, legible and logically organized format that reflects work in a professional degree program. Many of the projects require research and then making your findings and conclusions into an analysis. No projects should include cut and pasted information. All work should be in your own words. Projects will usually be done individually to give the best and deepest learning experience.

All information sources (texts or web sites) and other documentation used to complete projects must be clearly noted as part of the project and presentation. All images should be labeled with the subject, title, the architect, place and sources. Depth of research, completeness, accuracy, sources credited will all affect grading. Projects will typically require students to demonstrate problem-solving skills, including problem definition, data collection, and problem analysis. Exercises which gloss over these requirements will be downgraded. Additional instructions will be provided for each of the three projects assigned. Most of the projects will involve a class presentation usually in PowerPoint. If not familiar with this program, please start learning now on the computers in the student computer lab. You must know your project, your research, your analysis and not read your presentations.

Submission of Work: Just as an architect who does not do his work when due for the client is fired, submission of all work is expected on the date due. Due dates indicated are at the start of class unless stated otherwise. If you come to class late with your work, your work is late. Work submitted late will not be accepted unless “uncontrollable circumstances” exist and the student submits a letter of excused absence from the Dean’s office. Official excused absences must be submitted within one week of the dates absent to the Dean’s office. It is not fair to other students who have worked hard to meet the deadlines. Always turn in what you have completed to date to get credit. Projects will always be accepted early. If you have a planned absence from the course you must communicate with the professor ahead of time and turn in the work early prior to the planned absence, not after the due date. No make-up tests will be given without an excused absence within one week of test date from the SOA administration and an email notification to the instructor with the reason for absence within 24-hour hours of test date and time. Make up tests should be taken prior rather than after the test date. Grades for projects submitted on Blackboard will be based on the submittal when due, not on after the fact corrections. It is the student’s responsibility to make sure the correct and final version of your project is uploaded and submitted on Blackboard. Save your files to a flash, your computer and drop box. Email yourself your project while developing to make sure have a backup. Lost flash drives or computer problems will not be an excuse for not submitting a complete project.

Uncontrollable Circumstances: If circumstances beyond your control (e.g. extensive illness, family emergency, accident, etc.) make it impossible for you to participate in the course, such a situation as well as documentation must be brought to the instructors’ attention immediately at the email listed on the top of this handout. Official excused absences are handled in the Dean of Architecture’s office and documentation must be submitted to that office within one week of the absences. Delayed requests for consideration cannot and will not be accepted. “I” (Incomplete) grades are not available, unless it is evident beyond doubt that the student’s failure to complete the course is due to circumstances beyond his or her control.
Also note that an “I” grade can be given only if the student is passing the course at the time the failure to complete further work occurred.

**Attendance:** You must come to class to understand all the important information you will need to master this course. “Uncontrollable circumstances” should be the only reason for missing class. Invalid reasons for missing class include: early vacation; studio project deadline; studying; un-excused participation in a sport or extracurricular activity. You are responsible for any assignments, announcements, lectures or readings you miss even with an excused absence.

Please be considerate and come to class on time and are expected to remain in class for the entire scheduled period. **Late arrivals are disruptive.** If you consistently arrive after class time starts your class participation grade will be affected. Attendance will be taken at the beginning and sometimes the end of class. You are counted late if you arrive after the first 10 minutes of class. Three lates equals one absence. If you are more than 20 minutes late, you will be counted absent. You are allowed 3 unexcused absences in this course. After 4 unexcused absences you will be dropped from the course. All excused absences must be submitted to the Dean’s office within a week of the absence for a letter from the Dean to have an absence excused.

**Professionalism:** The practice of professional behavior is expected on the part of everyone – students, faculty, administrators, and staff – in the School of Architecture. You must not label the work of others as your own, and you must never damage or destroy anyone’s property, cheat, or steal. You are to show respect to both your fellow students and instructor by turning **cell phones off** (not on silent or vibrate) and put away **before class**. All student work must reflect this course as part of a professional degree program and so must be presented in the best possible manner. If it is illegible or does not meet the assigned criteria, it is a zero. Failure to follow these rules will result in removal from the class. Students texting and emailing during class while have a low class participation grade.

**Academic Honesty:** The academic honesty policy shall be adhered to by all Florida A&M University students and applies to all academic work, both inside and outside of class.

Florida A&M University is committed to academic honesty and its core values, which include scholarship, excellence, accountability, integrity, fairness, respect, and ethics. These core values are integrated into this academic honesty policy. Being unaware of the Academic Honesty policy is not a defense for violations of academic honesty. In cases, where the incident involves academic honesty violations and violations of the student code of conduct found in FAMU BOT Regulation 2.012, the case will be referred to the Office of Student Conduct & Conflict Resolution and FAMU BOT Regulations 2.012 and 2.013 will apply.

Details of the Academic Honesty policy are available on the SAET website.

**ADA Compliance:** To comply with the provisions of the Americans with Disabilities Act (ADA), please advise instructor of accommodations required to insure participation in this course. Documentation of disability is required and should be submitted to the Learning Development and Evaluation Center (LDEC). For additional information please contact the LDEC at (850) 599-3180.

**Policy Statement on Non-Discrimination:** It is the policy of Florida Agricultural and Mechanical University to assure that each member of the University community be permitted to work or attend classes in an environment free from any form of discrimination including race, religion, color, age, disability, sex, marital status, national origin, veteran status and sexual harassment as prohibited by state and federal statutes. This shall include applicants for admission to the University and employment.

*The Fall 2018 Introduction to the Technology of Architecture Course Schedule is posted separately.*

*Please read the syllabus and review the schedule and save in your files.*