Course Change Request

New Course Proposal

Date Submitted: 11/03/17 3:10 pm

Viewing: ARCH 409 : Urban Design Studio

Last edit: 11/16/17 2:39 pm

Changes proposed by: sdeyong

Programs referencing this course:

MINOR-UDPI: Urban Design in the Public Interest - Minor

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Craig Babe</td>
<td><a href="mailto:cbabe@tamu.edu">cbabe@tamu.edu</a></td>
<td>979 676 2732</td>
</tr>
</tbody>
</table>

Course prefix: ARCH  
Course number: 409

Department: Architecture

College/School: Architecture

Academic Level: Undergraduate

Undergraduate course level justification (Select One)

Prerequisites

All prerequisites will be enforced through COMPASS.

Effective term: 2018-2019

Complete Course Title

Urban Design Studio

Abbreviated Course Title

URBAN DESIGN STUDIO

Catalog course description

A design studio focused on urban design as a human-centered participatory practice; consideration of a project derived through community engagement; interdisciplinary service learning combining methodologies of architecture, landscape architecture and urban design.

Prerequisites and Restrictions

Concurrent enrollment in ARCH 419; grade of C or better in ARCH 331 and ARCH 335; grade of C or better in ARCH 305, ARCH 413, and CARC 301 or ARCH 494.

Concurrent Enrollment

Yes

ARCH 419

Should catalog prerequisites / concurrent enrollment be enforced?

Yes

In Workflow

1. ARCH Department Comm Chair
2. ARCH Department Head
3. Curricular Services Review
4. AR Committee Preparer
5. AR Committee Chair
6. AR College Dean
7. UCC Preparer
8. UCC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path

1. 11/03/17 3:34 pm
   Nancy Klein (nklein): Approved for ARCH Department Comm Chair

2. 11/06/17 9:30 am
   Robert Warden (r-warden): Approved for ARCH Department Head

3. 11/13/17 7:26 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review

4. 11/14/17 7:03 am
   Ann Broussard (ambroussard): Approved for AR Committee Preparer

5. 11/16/17 2:40 pm
   Leslie Feigenbaum (l-feigenbaum): Approved for AR Committee Chair

6. 11/16/17 3:03 pm
   Leslie Feigenbaum (l-feigenbaum): Approved for AR College Dean

7. 11/16/17 4:17 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer

8. 12/04/17 3:52 pm
   Sandra Williams

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>And</td>
<td>ARCH 419</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
<tr>
<td>And</td>
<td>ARCH 331</td>
<td>C</td>
<td>UG</td>
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<tr>
<td>And</td>
<td>ARCH 335</td>
<td>C</td>
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<tr>
<td>And</td>
<td>ARCH 305</td>
<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>And</td>
<td>ARCH 413</td>
<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>And</td>
<td>( CARC 301</td>
<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>Or</td>
<td>ARCH 494</td>
<td>C</td>
<td>UG</td>
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</tbody>
</table>

Crosslistings: No  Crosslisted With:  
Stacked: No  Stacked with:  

<table>
<thead>
<tr>
<th>Semester</th>
<th>接触时数/周</th>
<th>Lecture:</th>
<th>Lab:</th>
<th>Other:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Repeatable for credit? No  
CIP/Fund Code 0403010006  
Default Grade Mode Letter Grade(G)  
Method of instruction Lecture and Laboratory  
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No  
Will this course be taught as a distance education course? No  
Is 100% of this course going to be taught in Texas? Yes  
Will classroom space be needed for this course? Yes  
This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Required (select program)</th>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BED-EDAS) Environmental Design Architectural Studies - BED</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective (select program)</th>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BED-EDAS) Environmental Design Architectural Studies - BED</td>
<td></td>
</tr>
</tbody>
</table>

Has/will this course be(en) submitted for core curriculum consideration? No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: New Course Syllabus ARCH 409-Urb Dsgn Studio.pdf

Letters of support or other documentation: No

Additional information: Fulfills BED degree requirements and offered in lieu of ARCH 406.

Reviewer Comments:


Sdeyong (10/24/17 12:37 pm): Syllabus revised per request.

Nancy Klein (nklein) (10/25/17 9:08 pm): Rollback: Prerequisites: Remove junior or senior classification from prerequisites in syllabus. Revise statement as follows: Admission to upper level in environmental design; ARCH 305, ARCH 331 and ARCH 335; CARC 301 or ARCH 494, ARCH 413, and concurrent enrollment in ARCH 419 Community Outreach in Urban Design. Preference will be given to students enrolled in the Urban Design in the Public Interest minor. Remove junior or senior classification from prerequisites on CARS. Should catalog prerequisites/concurrent enrollment be enforced? [ ] Change to Yes

Sdeyong (10/31/17 8:22 am): Changes made per request.

Sandra Williams (sandra-williams) (11/01/17 12:52 pm): Rollback: If you require a grade of C or B in your enforced prerequisites (table), you must include a statement in the catalog prerequisites as indicated on the form. Also, there is no such minimum grade of “n/a” - the default is “D”.

Sdeyong (11/01/17 1:58 pm): Changes made per Sandra’s instructions.

Nancy Klein (nklein) (11/01/17 10:40 pm): Rollback: Per your request

Sdeyong (11/03/17 9:02 am): Changes made per Curricular Services instructions. See my email for details.

Nancy Klein (nklein) (11/03/17 3:00 pm): Rollback: Rollback to update minimum grade requirement.

Sdeyong (11/03/17 3:21 pm): Minimum grade requirement of C for ARCH 331 and ARCH 335 has been added.

Sandra Williams (sandra-williams) (11/13/17 7:23 pm): Edits made to the catalog and enforced prerequisite table to comply with style guide.

Sandra Williams (sandra-williams) (11/13/17 7:26 pm): Update received.

Sandra Williams (sandra-williams) (12/04/17 3:52 pm): UCC approved in December.
Course Number and Title: ARCH 409 Urban Design Studio
Term: Spring 2019
Location and Time: MWF 13:50-16:50, ARCA XXX

Course Description and Prerequisites

ARCH 409 Urban Design Studio (2-9). Credit 5. A design studio focused on urban design as a human-centered participatory practice; consideration of a project derived through community engagement; interdisciplinary service learning combining methodologies of architecture, landscape architecture and urban design. Prerequisites: Admission to upper level in environmental design; ARCH 305, ARCH 331 and ARCH 335; CARC 301 or ARCH 494, ARCH 413, and concurrent enrollment in ARCH 419 Community Outreach in Urban Design. Preference will be given to students enrolled in the Urban Design in the Public Interest minor.

5.00 Credit hours
2.00 Lecture hours
9.00 Lab hours

Introduction

This is the capstone course of the undergraduate minor in Urban Design in the Public Interest. It is the culmination of the coursework that the BED student has undertaken both within his or her major, and more specifically, within this minor. It is offered in lieu of ARCH 406 to BED students enrolled in the minor.

Students and faculty will carry out design activities serving a target urban community through a project-based Public Interest Design (PID) paradigm. PID is a participatory vehicle for faculty and students to work with urban communities that traditionally do not have access to high-quality design solutions. Studio curriculum is modeled on the interdisciplinary, team-based design practice that students will later use as design professionals. The studio finds its theoretical orientation for design in the three-credit ARCH 413 Elements of Urban Design, taken in the previous semester.

This course is taught in tandem with the URPN 493 Urban and Regional Studies Capstone Course. Students in both courses will collaborate in interdisciplinary teams to undertake the project. Students in both courses are concurrently enrolled in ARCH 419/URPN 419 Community Outreach in Urban Design (one credit), where together they will interact with the target community to gather data and define the final project.

The studio adopts the mission statement of SEED (Social Economic Environmental Design Network), which is “To advance the right of every person to live in a socially, economically, and environmentally healthy community,” and follows its five guiding principals:

1. Advocate with those who have a limited voice in public life
2. Build structures for inclusion that engage stakeholders and allow communities to make decisions
3. Promote social equality through discourse that reflects a range of values and social identities
4. Generate ideas that grow from place and build local capacity
5. Design to help conserve resources and minimize waste

Following the paradigm of PID, as well as the Landscape Urbanism Movement emergent in the 1990’s, the studio advocates for social justice and diversity, while addressing the inherent complexity of contemporary urban conditions on multiple, intersecting levels and scales (social, political, environmental, economic, cultural and geographic), in order to yield thoughtful and innovative designs in the public interest.
Student Learning Outcomes

Following the completion of the course, the student will have gained skill and expertise to be able to:

1. Execute Data collection, analysis, and design problem definition.
   - Compile and analyze relevant census, built environment, and geological data using GIS mapping techniques and graphic design.
   - Compile and analyze data and information gathered from community outreach.
   - Generate site documentation.
   - Generate program goals, functional needs, phasing, planning guidelines, and policy.
   - Apply operative mapping analysis in the formulation of design solutions.

2. Create a Design Solution
   - Produce a design using interdisciplinary methodology derived from landscape design, architectural design, and urban design, as adapted in combination to address the defined problem.
   - Apply urban acupuncture to yield a leveraged, high impact intervention.
   - Work at different scales (city, neighborhood, street, building), as dictated by the defined problem.

3. Apply Interdisciplinary Design Practice
   - Collaborate effectively between team members from allied disciplines.
   - Participate effectively in team building and partnering as a part of the design process.

Instructor Information

Instructor: Craig Babe, AIA
Email: cbabe@tamu.edu
Office Hours: TR 08:00 – 09:30
Office Location: Langford A 430

Textbooks, Reference Material, Software, Design Materials

- A laptop loaded with software appropriate for the development and presentation of the preliminary research and final project must be brought to each session. ArcGIS and the Adobe creative suite (including Illustrator, InDesign, and Photoshop) are mandatory. The student may use whatever project design software he or she prefers (AutoCad, ArchiCad, Revit, etc.).
- Design materials to be purchased:
  - One 5 x 8.25 Moleskine Art Plus Large Sketchbook for use as a design journal
  - One sketch paper roll, 12" width, 50 yds
  - Site model materials: basswood, chipboard, poplar etc (expenses to be shared within the class)

Texts to be discussed in periodic seminars to take place during the lecture hours:

Grading Policies
A = 90-100; B = 80-89; C = 70-79; D = 60-69; F = <60

The final grade (100 attainable points) is comprised of preliminary research (30), final project (60), and participation (10). A progress grade will be indicated following the mid-semester juried presentation. Each element of the final presentation will be assessed according to quality of design development, completeness of required content, and clarity of communication. The instructor will specify the final presentation drawing standards, layout, line weights, and other graphic conventions. The urban design project will be described, and its requirements specified, in a brief handed out in class. This project will be undertaken in teams, except with the instructor's permission.

Preliminary Research (30% of final grade); conducted by entire class:

<table>
<thead>
<tr>
<th>Item:</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of research</td>
<td>40</td>
</tr>
<tr>
<td>Quality and clarity of problem definition</td>
<td>50</td>
</tr>
<tr>
<td>Timely completion to facilitate production sequence</td>
<td>10</td>
</tr>
</tbody>
</table>

Final Project (60% of final grade); conducted in teams:

<table>
<thead>
<tr>
<th>Item:</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesis of research into a design</td>
<td>40</td>
</tr>
<tr>
<td>Effectiveness of the design to solve the defined problem</td>
<td>50</td>
</tr>
<tr>
<td>Quality and clarity of communication (both graphic and verbal)</td>
<td>10</td>
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</table>

Participation (10% of final grade); individual student:

<table>
<thead>
<tr>
<th>Item:</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance: class sessions and reviews</td>
<td>20</td>
</tr>
<tr>
<td>Professionalism (no phone calls or eating during in class, messes promptly tidied up)</td>
<td>10</td>
</tr>
<tr>
<td>Design Journal: ideas, notes and sketches compiled in the design journal</td>
<td>20</td>
</tr>
<tr>
<td>Teamwork: effective partnering, constructive, positive team member, equal effort</td>
<td>50</td>
</tr>
</tbody>
</table>

Final Deliverables

Prior to the first day of reviews, all material produced in the class, including preliminary research, reports, and final presentation sheets, are to be submitted as .pdf files, reduced in Illustrator to fit on the given 8 ½ x 11” layout grid, and as color prints.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Introduction. Team Building and Partnering. Preliminary research started: data gathering (census, built environment, and geological data using GIS mapping techniques)</td>
</tr>
<tr>
<td>2</td>
<td>Preliminary research: data gathering</td>
</tr>
<tr>
<td>3</td>
<td>Preliminary research: data compilation, problem definition, preliminary report started</td>
</tr>
<tr>
<td>4</td>
<td>Preliminary research: report produced and presented in formal review</td>
</tr>
<tr>
<td>5</td>
<td>Final project: schematic design started, preliminary report revised as required</td>
</tr>
<tr>
<td>6</td>
<td>Final project: schematic design, final report submitted</td>
</tr>
<tr>
<td>7</td>
<td>Final project: schematic design reviewed, developed design started</td>
</tr>
<tr>
<td>8</td>
<td>Final Project: developed design, desk critiques</td>
</tr>
<tr>
<td>9</td>
<td>Final Project: developed design, desk critiques, mock-up presentation reviewed</td>
</tr>
</tbody>
</table>
Other Pertinent Course Information

Working Outside Class Time Expected:
The successful student must commit to at least three hours of study outside class time for each hour of scheduled class time. This will yield a total 32 hours each week, in and out of class. Interim submittal will be required every week in order to alleviate the inevitable end of term time crunch. Working the full 36 hours per week on the project will reduce the amount of time needed to prepare the final submission at the end of the semester because various components will have been already been completed and discussed.

Time Management:
At the start of the semester, the successful student will complete a work schedule, incorporating all of his or her classes and other obligations, and stick with it as much as possible.

Academic Integrity
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: http://aggiehonor.tamu.edu

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Attendance and Make-Up Policy
The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07. Students who are requesting an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code (See TAMU Student Rule 24). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code. Students granted an excused absence may ask to make-up for the missed work and submit the assignment at a later time. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit http://disability.tamu.edu
Care of Facilities

Please respect your facilities in the College of Architecture (studio space, photo lab, shop, labs).

The use of spray paint, spray adhesive or other surface-altering materials is not permitted in the Langford Complex, except in designated zones (we do have a spray booth facilities located on our complex). Students who violate this rule will be liable for the expenses associated with repairing damaged building finishes and surfaces.

Throughout the semester and at the end of the semester, your area must be clean of all trash. You are responsible for cleaning your studio, desk and locker at the end of each semester.

No power tools may be used in the design studio. No dust or odor producing processes may be conducted in the studio. No wet casting processes may be conducted in the studio. The college shop and spray booth facilities must be used for the above-mentioned processes. Professional behavior and conduct is expected of each student.

All studio desks must be covered. In addition students must have at minimum an 18" x 24" cutting mat at their desk.

Studio Policy

All students, faculty, administration and staff of the Department of Architecture at Texas A&M University are dedicated to the principle that the Design Studio is the central component of an effective education in architecture. They are equally dedicated to the belief that students and faculty must lead balanced lives and use time wisely, including time outside the design studio, to gain from all aspects of a university education and world experiences. They also believe that design is the integration of many parts, that process is as important as product, and that the act of design and of professional practice is inherently interdisciplinary, requiring active and respectful collaboration with others.

Students and faculty in every design studio will embody the fundamental values of optimism, respect, sharing, engagement, and innovation. Every design studio will therefore encourage the rigorous exploration of ideas, diverse viewpoints, and the integration of all aspects of architecture (practical, theoretical, scientific, spiritual, and artistic), by providing a safe and supportive environment for thoughtful innovation. Every design studio will increase skills in professional communication, through drawing, modeling, writing and speaking.

Students and faculty in every design studio will embody the fundamental values of optimism, respect, sharing, engagement, and innovation. Every design studio will therefore encourage the rigorous exploration of ideas, diverse viewpoints, and the integration of all aspects of architecture (practical, theoretical, scientific, spiritual, and artistic), by providing a safe and supportive environment for thoughtful innovation. Every design studio will increase skills in professional communication, through drawing, modeling, writing and speaking.

Important Links Below

- Department of Architecture Website: http://dept.arch.tamu.edu/
- Department Financial Assistance: http://dept.arch.tamu.edu/financial-assistance/
- Academic Calendar: http://admissions.tamu.edu/registrar/general/calendar.aspx
- Final Exam Schedule Online: http://admissions.tamu.edu/registrar/general/finalschedule.aspx
- On-Line Catalog: http://catalog.tamu.edu
- Student Rules: http://student-rules.tamu.edu/
- Aggie Honor System Office: http://aggiehonor.tamu.edu/
Course Change Request

New Course Proposal

Date Submitted: 09/26/17 8:54 am

Viewing: AREN 300: Architectural Engineering Systems

Last edit: 09/26/17 9:41 pm
Changes proposed by: s.shields

Programs referencing this course

BS-AREN: Architectural Engineering

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morad Atif</td>
<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix: AREN  
Course number: 300

Department: College of Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)

Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level (alternate): Graduate

Effective term: 2018-2019

Complete Course Title: Architectural Engineering Systems

Abbreviated Course Title: ARCH ENGR SYSTEMS

Catalog course description

Analysis and application of the engineering design process to solve problems associated with the design and operation of building systems, specifically related to HVAC, electrical power and lighting, and structural integrity; communication of solutions to technical problems of building systems, through writing, presentations, and team interactions, typical of architectural engineers in the building industry; emphasis on the engineering design process in architectural engineering, structural systems for buildings, mechanical systems for heating, ventilation, and air-conditioning, electrical lighting for buildings, building fire safety, building acoustics, building codes and standards, interface issues among different building systems, and sustainability aspects of building systems.

Prerequisites and Restrictions

Grade of C or better in AREN 200; junior classification or approval of instructor.

Concurrent Enrollment

No

Should catalog prerequisites?

Yes

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
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<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AREN 200</td>
<td>C</td>
<td>UG</td>
<td></td>
</tr>
</tbody>
</table>

Crosslistings: No
Crosslisted With:
Stacked: No
Stacked with:

Semester: 3
Credit Hour(s): Contact Hour(s) (per week):
Lecture: 3
Lab: 0
Other: 0
Total: 3

Repeatable for credit?: No
Three-peat?: No

CIP/Fund Code: 1404010006
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No

Will this course be taught as a distance education course?: No

Is 100% of this course going to be taught in Texas?: Yes

Will classroom space be needed for this course?: Yes

This will be a required course or an elective course for the following programs:

Required (select program)

Program(s)

(EN-CAT) Architectural Engineering

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration?: No

Has/will this course be(en) submitted for Writing or Communication consideration?: No

Has/will this course be(en) submitted for

https://nextcatalog.tamu.edu/courseleaf/approve/
ICD consideration?

Course Syllabus

Syllabus: Upload syllabus
Upload syllabus [AREN 300 AREN Systems Syllabus.docx]

Letters of support or other documentation
No

Additional information

Reviewer Comments
Sandra Williams (sandra-williams) (09/25/17 4:10 pm): Rollback: Syllabus has wrong Aggie Honor Code website link. Form: please update catalog course description to comply with the catalog style guide for course descriptions http://registrar.tamu.edu/Our-Services/Curricular-Services/Catalog/Style-Guide-for-Catalog-Course-Descriptions.
Sandra Williams (sandra-williams) (09/26/17 9:41 pm): Update received.
Sandra Williams (sandra-williams) (12/04/17 3:52 pm): UCC approved in December.

Reported to state?
Add

Key: 18118
A. COURSE INFORMATION AND PREREQUISITES

Title and Number: AREN 300:500 Architectural Engineering Systems
Term: Fall
Meeting Times and Locations: TBD
Mode of Instruction: Lecture; Traditional, Face-to-Face
Credit Hour: 3 hr. (3-0)
Prerequisites: AREN 200; Junior classification or approval of instructor

B. COURSE DESCRIPTION

This course covers the analysis and application of engineering design process to solve problems associated with the design and operation of building systems, specifically related to HVAC, electrical power and lighting, and structural integrity. This course also covers communication of solutions to technical problems of building systems, through writing, presentations, and team interactions, typical of architectural engineers in the building industry. Topics covered include: the engineering design process in architectural engineering; structural systems for buildings; mechanical systems for heating, ventilation, and air-conditioning; electrical lighting for buildings; building fire safety; building acoustics; building codes and standards; interface issues among different building systems; and sustainability aspects of building systems.

C. INSTRUCTOR INFORMATION

Name:
Phone Number:
E-mail Address: http://engineering.tamu.edu/aren
Website: http://engineering.tamu.edu/aren
Office Hours:
Office Location:

D. STUDENT-INSTRUCTOR INTERACTION

The instructor-student interactions will take place through: 1) lecture session; 2) email inquiry and replies; and 3) appointments made through emails or phone calls.

E. TEXTBOOK

Required:
Reference Materials:
- Mark McAfee, Editor, Principles and Practice of Architectural Engineering, Architectural Sample Questions and Solutions, 2d Edition, American Society of Civil Engineers, 2010

Additional references and materials will be provided through eCampus, email, or in class as needed during the semester.

F. COURSE LEVEL OUTCOMES
On successful completion of this course, the student will be able to:

1. Explain how real-world constraints affect building system design, and the design of a building system based on given performance measures.
2. Align appropriate tools and computation methods to solving architectural engineering problems.
3. List examples of both uncertainties in data and uncertainties in knowledge of a system that effect ability of predicting building system’s behavior and/or performance.
4. List the main building codes in two building system areas, and identify essential health and safety regulatory bodies and/or standards for architectural engineering projects.
5. Describe the engineering design process for building systems, and explain key concepts and problem-solving processes in at least two building system areas.
6. Analyze and solve well defined engineering problems that span more than one technical area of architectural engineering.
7. Explain, using real life examples, the interfaces between the four specialty areas of architectural engineering and architectural design.
8. Describe the principles of sustainability for the design of engineered systems, and explain factors that affect high-performance buildings, using examples and related standards.
9. Define the traditional technical fields in architectural engineering, and describe basic knowledge and general perspective of a specialized building system area.
10. Describe the process of becoming a licensed professional engineer.
11. Describe the role that professional societies serve to benefit the industry of building systems. Explain the importance of lifelong learning for a professional engineer.
12. Engage in professional societies of architectural engineering as networking opportunity.
13. Summarize strategies for analyzing one’s own learning or thinking processes in order to recognize and solve problems.
14. Develop communication skills, including: developing public speaking skills, crafting a coherent and logically presented message; writing in the style of accepted norms, referencing sources properly, properly label graphs and plots.
15. Create slides for oral presentations with an appropriate amount of text, professional formatting, and logical sequencing.
16. Explain the factors affecting the performance interdisciplinary teams. Function effectively and explain your role as a member of an interdisciplinary team.
17. Explain why business fundamentals are important in the architectural engineering field.
G. Program Level Outcomes

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Interdisciplinary Engineering with a specialization in Architectural Engineering (http://engineering.tamu.edu/aren)

- **Humanities & Social Sciences**: Recognize and incorporate cultural, historical, and social behavior considerations, including human performance, as well as knowledge of contemporary issues, in the development, analysis, and evaluation of solutions to engineering and societal problems (Outcome 3).

- **Design of Building Systems**: Design a system or process in at least one of the design specialties to meet desired needs within realistic constraints, including: building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social (Outcome 6).

- **Tools for Architectural Engineering Problems**: Apply relevant knowledge, techniques, skills and modern engineering tools to identify, formulate and solve engineering problems (Outcome 7)

- **Project and Construction Management**: Apply basic principles of project management and construction management to the design, construction and operation of building systems, according to building regulations and standards (Outcome 9).

- **Integration of Building Systems**: Solve architectural engineering problems by integrating knowledge from at least two of the design specialties – mechanical, structural, or electrical – with knowledge of architectural design or construction management (Outcome 10).

- **Principles of Sustainable and High-Performance Buildings**: Identify and articulate the importance of sustainability to architectural engineering and apply its principles, including those related to high-performance buildings, energy efficiency, materials selection, and embedded systems, to the design of building systems (Outcome 11).

- **Technical Specialization**: Solve problems and analyze a complex system or process in one of the three program specialties – designing, building, and operating mechanical systems; designing and building structural systems; designing, building and operating electrical power and lighting systems – and state the process to become a specialist in this area (Outcome 12).

- **Communication**: Organize and deliver effective verbal, written, quantitative and graphical communications, including through architectural drawings (Outcome 13).

- **Interdisciplinary Teams**: Function in interdisciplinary teams for the design and construction of buildings and apply best practices of leadership to direct such teams to solve problems (Outcome 14).

- **Continuous Learning**: Explain the need for continuous learning and demonstrate the ability for self-directed study without formal instructions (Outcome 15).

- **Professional Practice**: Explain the role of professional licensure, globalization, business, and ethics, which govern engineering practice (Outcome 16).

H. Grading Policies
3 Exams – 15% each
Team Project 20%
Participation in class and attendance: 5%
Assignments: 30%

Exams
- Exams will be held in the assigned classroom.
- Exams will cover the topics discussed in the class. In order to be adequately prepared for the exams, students should read the relevant assigned material, additional notes provided by the instructor or in the class, and class notes.
- Exams will typically be questions covering lecture material from class.
- Makeup exam time (ONLY if allowed for an excused absence, see TAMU Student rule 7, not hunting, or a wedding, or a Disney trip, or…) will be arranged with the instructor and will consist of a comprehensive closed-book, closed-note format.

Team Project
- To be developed

Conversion of numerical grade to letter grade will be made as follows:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% and above</td>
<td>A</td>
</tr>
<tr>
<td>80% to below 90%</td>
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<tr>
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<td>C</td>
</tr>
<tr>
<td>60% to below 70%</td>
<td>D</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
</tr>
</tbody>
</table>
I. **CALENDAR OF TOPICS AND IMPORTANT DATES**

- Though scheduled, instructor will verify exam dates & venue

<table>
<thead>
<tr>
<th>Week #1</th>
<th>Overview: Architectural Engineering &amp; Building Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week #2</td>
<td>Principles of Architectural Engineering Design</td>
</tr>
<tr>
<td>Week #3</td>
<td>Professional Practice, Regulatory perspective, and Professional Societies</td>
</tr>
<tr>
<td>Week #4</td>
<td>Environmental Control Systems for Buildings</td>
</tr>
<tr>
<td>Week #5</td>
<td>Heating, Ventilating, and Air Conditioning (HVAC).</td>
</tr>
<tr>
<td>Week #6</td>
<td>Electrical Lighting Systems</td>
</tr>
<tr>
<td>Week #7</td>
<td>Integrated Building Energy Management Systems</td>
</tr>
<tr>
<td>Week #8</td>
<td>Fire Safety</td>
</tr>
<tr>
<td>Week #9</td>
<td>Noise Control and Room Acoustics</td>
</tr>
<tr>
<td>Week #10</td>
<td>Structural Systems for Buildings</td>
</tr>
<tr>
<td>Week #11</td>
<td>Building Envelope Systems</td>
</tr>
<tr>
<td>Week #12</td>
<td>Interface of Building Systems</td>
</tr>
<tr>
<td>Week #13</td>
<td>Interface of Building Systems</td>
</tr>
<tr>
<td>Week #14</td>
<td>Building Systems Design &amp; Sustainability</td>
</tr>
</tbody>
</table>

J. **SPECIAL PROVISIONS**

1. **Americans with Disabilities Act (ADA) Policy Statement**
   The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Disability Services, located in the Disability Services Building at White Creek on west campus or call 979-845-1637. For more information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

2. **Academic Integrity**
   Misconduct in research or scholarship includes fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data. It is very important to read other people's work and to use their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge.
When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

If you use someone else's idea without using his or her specific words, this is called paraphrasing. When you paraphrase, you are expected to indicate the source of the idea (the author and publication date, but not a page number). This allows a reader to find the source of the ideas, verify that you have accurately represented them, and obtain additional information about those ideas if necessary. If you use someone else's exact words, this is called quoting. When you quote, you are expected to enclose the words in quotation marks, and indicate the source of the quote (the author, publication date, and page number). Plagiarism also applies to information found on the web; it is equally important to cite a web source and the rules above pertain. Consequently, if there are not quotation marks around the text and no source is cited, instructors will assume that you intend for them to conclude that any ideas, especially the specific words, that you presented in your work are your own. Thus, if the idea or the exact words are taken from another source and you do not indicate the source of the idea, you are representing another person's ideas as if they were your own. This is called plagiarism and is a very serious offense.

Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, is sufficient grounds to initiate an academic dishonesty case. For additional information please visit: http://aggiehonor.tamu.edu/.

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

3. Absences

Rules concerning excused absences may be found at http://student-rules.tamu.edu/rule07. In particular, except for absences due to religious obligations, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the coming semester may be found at http://student-rules.tamu.edu/append4.

If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If the instructor has a regularly scheduled make up exam, students are expected to attend unless they have a university approved excuse. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the
reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student Rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code.

1) Participation in an activity that is required for a class and appears on the university authorized activity list at https://stuactonline.tamu.edu/app/sponsauth/index
2) Death or major illness in a student’s immediate family.
3) Illness of a dependent family member.
4) Participation in legal proceedings or administrative procedures that require a student’s presence.
5) Religious holy day. NOTE: Prior notification is NOT required.
6) Injury or illness that is too severe or contagious for the student to attend class.
   a) Injury or illness of three or more class days:
       Student will provide a medical confirmation note from his or her medical provider within one week of the last date of the absence (see Student Rules 7.1.6.1)
   b) Injury or illness of less than three class days:
       Student will provide one or both of these (at instructor’s discretion), within one week of the last date of the absence:
       (i.) Texas A&M University Explanatory Statement for Absence from Class form available at http://attendance.tamu.edu
       (ii.) Confirmation of visit to a health care professional affirming date and time of visit.
   c) An absence for a non-acute medical service does not constitute an excused absence.
7) Required participation in military duties.
8) Mandatory admission interviews for professional or graduate school that cannot be rescheduled.
9) Mandatory participation as a student-athlete in NCAA-sanctioned competition.
10) In accordance with Title IX of the Educational Amendments of 1972, Texas A&M University shall treat pregnancy (childbirth, false pregnancy, termination of pregnancy and recovery therefrom) and related conditions as a justification for an excused absence for so long a period of time as is deemed medically necessary by the student’s physician. Requests for excused absence related to pregnancy should be directed to the instructor.

Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

4. **Disruptive Behavior**
If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.
5. **Copyright**
Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

6. **Defacement of University Property**
"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)". The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 09/26/17 8:58 am

Viewing: AREN 320 : Lighting Engineering for Buildings

Last edit: 09/26/17 9:43 pm

Changes proposed by: s.shields

Programs referencing this course:
- BS-AREN: Architectural Engineering

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morad Atif</td>
<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix: AREN
Course number: 320

Department: College of Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One):
- College/Program Course Level Rubric

Academic Level (alternate): Graduate
Effective term: 2018-2019

Complete Course Title: Lighting Engineering for Buildings
Abbreviated Course Title: LIGHTING ENGINEERING FOR BLDGS

Catalog course description:
Reinforces the fundamentals of illuminating engineering for building interiors; focuses on the design and analysis of electrical lighting systems, including the integration between the lighting design process and the technical foundations of building lighting; emphasis on the fundamentals of lighting engineering and basic engineering methods for building lighting systems, lighting design criteria, lighting calculations, and power budgets.

Prerequisites and Restrictions:
- Junior or senior classification; major in engineering or approval of instructor.

Concurrent Enrollment: No
Should catalog prerequisites / concurrent enrollment be enforced?: No
Crosslisting: No
Crosslisted With:

Approval Path
1. 09/26/17 8:33 pm
   Tim Jacobs (tjacob): Approved for CLEN Department Head
2. 09/26/17 9:44 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 6:25 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 8:44 am
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:23 am
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/13/17 4:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair
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<td>Contact Hour(s) (per week):</td>
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<td>Three-peat?</td>
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<td>Letter Grade(G)</td>
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<td>Alternate Grade Modes</td>
<td>Satisfactory/Unsatisfactory</td>
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<td>Method of instruction</td>
<td>Lecture</td>
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<tr>
<td>Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)</td>
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</tr>
<tr>
<td>Will this course be taught as a distance education course?</td>
<td>No</td>
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<tr>
<td>Is 100% of this course going to be taught in Texas?</td>
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</tr>
<tr>
<td>Will classroom space be needed for this course?</td>
<td>Yes</td>
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This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Required (select program)</th>
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</thead>
<tbody>
<tr>
<td>(BS-AREN) Architectural Engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective (select program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has/Will this course be(en) submitted for core curriculum consideration?</td>
</tr>
<tr>
<td>Has/Will this course be(en) submitted for Writing or Communication consideration?</td>
</tr>
<tr>
<td>Has/Will this course be(en) submitted for ICD consideration?</td>
</tr>
</tbody>
</table>

**Course Syllabus**

Syllabus: Upload syllabus
Upload syllabus: [AREN 320 Lighting Engineering Syllabus.docx](https://nextcatalog.tamu.edu/courseleaf/approve/ AREN 320 Lighting Engineering Syllabus.docx)
<table>
<thead>
<tr>
<th>Letters of support or other documentation</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload files</td>
<td>AREN Support letter - ARCH 433.pdf</td>
</tr>
<tr>
<td>Additional information</td>
<td></td>
</tr>
</tbody>
</table>
| Reviewer Comments                       | Sandra Williams (sandra-williams) (09/25/17 4:12 pm): Rollback: Syllabus has wrong Aggie Honor Code website link. Form: please update catalog course description to comply with the catalog style guide for course descriptions http://registrar.tamu.edu/Our-Services/Curricular-Services/Catalog/Style-Guide-for-Catalog-Course-Descriptions.  
Sandra Williams (sandra-williams) (09/26/17 9:44 pm): Update received.  
Sandra Williams (sandra-williams) (12/04/17 3:53 pm): UCC approved in December. |
| Reported to state?                      | Add |

Key: 18159
A. COURSE INFORMATION AND PREREQUISITES

Title and Number: AREN 320:500 Lighting Engineering for Buildings
Term: Fall
Meeting Times and Locations: TBD
Mode of Instruction: Lecture; Traditional, Face-to-Face
Credit Hour: 3 hr. (3-0)
Prerequisites: Junior or senior classification or approval of instructor

B. COURSE DESCRIPTION

This course reinforces the fundamentals of illuminating engineering for building interiors, and focuses on the design and analysis of electrical lighting systems, including the integration between the lighting design process and the technical foundations of building lighting. Key topics covered include fundamentals of lighting engineering and basic engineering methods for building lighting systems, lighting design criteria, lighting calculations, and power budgets.

C. INSTRUCTOR INFORMATION

Name:
Phone Number:
E-mail Address:
Website: http://engineering.tamu.edu/aren
Office Hours:
Office Location:

D. STUDENT-INSTRUCTOR INTERACTION

The instructor-student interactions will take place through: 1) lecture session; 2) email inquiry and replies; and 3) appointments made through emails or phone calls.

E. TEXTBOOK

Required:
- Steffy, G., Architectural Lighting Design (3rd Edition), New York, John Wiley & Sons

References:
- Other supplementary texts and references as assigned
Additional references and materials will be provided through eCampus, email, or in class as needed during the semester.

F. Course Level Outcomes

On successful completion of this course, the student will be able to:
1. Select and use appropriate mathematical software for formulating and solving engineering problems, including graphical representations and interpretation of results.
2. Justify engineering decisions and develop engineering judgments based on physics concepts and laws.
3. Assess (quantitatively) and explain the effects of architectural engineering projects (lighting) on human performance.
4. Apply key concepts and theories of electricity to solve engineering problems (lighting).
5. Analyze and evaluate electrical systems and circuits related architectural engineering problems.
6. Conduct experiments in one (electrical lighting for buildings) or across more than one of the technical areas of architectural engineering according to established procedures and report the results.
7. Determine the requirements and constraints for a building system (electrical lighting systems for buildings) to meet a well-defined set of client’s needs.
8. Select a design of a building system (electrical lighting systems for buildings) from alternatives based on constraints and requirements. Define appropriate performance measures.
9. Apply the design process to meet a well-defined set of requirements and constraints.
10. Define the types of problems that an architectural engineer is competent to address consistent with ethical and licensure standards. Explain the information required to characterize an engineering problem and formulate a solution.
11. Explain the use of multiple architectural engineering problem solving techniques for well-defined problems in multiple sub-disciplines.
12. Apply basic knowledge of the current technical fields in architectural engineering to analyze relationships to one another.
13. Compare and contrast the current technical fields of architectural engineering and their relationships to one another.
14. Investigate fundamental principles and current specifications in a specialized technical area of interest.
15. Relate, using examples, current architectural engineering problems to specialized fields in architectural engineering.
16. Describe the current technical trends of the specialized fields in architectural engineering (electrical lighting systems for buildings).

G. Program Level Outcomes

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Interdisciplinary Engineering with a specialization in Architectural Engineering (http://engineering.tamu.edu/aren)

- **Mathematics**: Apply knowledge of mathematics through differential equations to architectural engineering problems (Outcome 1).
- **Physical Sciences**: Apply knowledge of physical sciences to architectural engineering problems (Outcome 2).
- **Humanities & Social Sciences**: Recognize and incorporate cultural, historical, and social behavior considerations, including human performance, as well as knowledge of contemporary issues, in the development, analysis, and evaluation of solutions to engineering and societal problems (Outcome 3).
- **Engineering Sciences**: Analyze and solve problems in engineering sciences including: mechanics of materials, thermodynamics, fluid dynamics, and electricity (Outcome 4).
- **Experiments, Data Analysis and Interpretation**: Select and conduct engineering laboratory and field experiments and analyze and evaluate resulting data (Outcome 5).
- **Design of Building Systems**: Design a system or process in at least one of the design specialties to meet desired needs within realistic constraints, including: building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social (Outcome 6).
- **Tools for Architectural Engineering Problems**: Apply relevant knowledge, techniques, skills and modern engineering tools to identify, formulate and solve engineering problems (Outcome 7)
- **Technical Specialization**: Solve problems and analyze a complex system or process in one of the three program specialties – designing, building, and operating mechanical systems; designing and building structural systems; designing, building and operating electrical power and lighting systems – and state the process to become a specialist in this area (Outcome 12).

**H. Grading Policies**

3 Exams – 20% each  
8 Assignments: 5 % each  

**Exams**
- Exams will be held in the assigned classroom.  
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**Assignments**
- To be developed and handed in class  

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<thead>
<tr>
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</tr>
</tbody>
</table>
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   a. Though scheduled, instructor will verify exam dates & venue

<table>
<thead>
<tr>
<th>Week #1</th>
<th>Fundamentals of lighting in buildings</th>
<th>Notes/book</th>
</tr>
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<tbody>
<tr>
<td>Week #2</td>
<td>Fundamental terminology and photometric units</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #3</td>
<td>Lighting measurements and visibility</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #4</td>
<td>Lighting sources</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #5</td>
<td>Electrical lighting design process</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #6</td>
<td>Lighting design criteria and quality</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #7</td>
<td>Lighting systems and photometric reports</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #8</td>
<td>lighting controls</td>
<td>Notes/book</td>
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<td>Week #9</td>
<td>Regulatory requirements, standards of Illuminating Engineering Society</td>
<td>Notes/book</td>
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<tr>
<td>Week #10</td>
<td>Lighting calculations- I</td>
<td>Notes/book</td>
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<tr>
<td>Week #11</td>
<td>Lighting calculations- II</td>
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<tr>
<td>Week #12</td>
<td>Lighting energy consumption &amp; associated thermal loads</td>
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</tr>
<tr>
<td>Week #13</td>
<td>Lighting economics</td>
<td>Notes/book</td>
</tr>
<tr>
<td>Week #14</td>
<td>Lighting computational software-applications</td>
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</tr>
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their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge. When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

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student’s removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.

5. **Copyright**
Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

6. **Defacement of University Property**
"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)". The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
September 22, 2017

RE: Letter of support for the development of the Lighting Engineering for Buildings course in the Bachelor of Science in Architectural Engineering degree program

To whom it may concern,

Design of the new Bachelor of Science in Architectural Engineering (BS AREN) program is a joint initiative between the College of Architecture and the College of Engineering, whose collective areas of expertise cover most of the key technical knowledge areas of architectural engineering. The BS AREN degree program consists of 128 semester credit hours (SCH) and will offer an interdisciplinary learning environment that combines courses and experiences in civil, mechanical and electrical engineering; engineering technology; and in architecture and construction science.

The education objectives of the BS AREN degree program are to produce graduates who are prepared to apply scientific and engineering principles and technologies for the design, construction, operation, and maintenance of building systems. Typical engineered building-systems include: heating, ventilation, and air-conditioning (HVAC); structure; electrical power and lighting; fire protection; and communication and controls. In order to meet the education objectives of the BS AREN degree program, a new course in Lighting Engineering for Buildings is being developed. The catalog description for the course will be:

This course reinforces the fundamentals of illuminating engineering for building interiors. It focuses on the design and analysis of lighting systems, including the integration between the lighting design process and the technical foundations of building lighting. Key topics covered include fundamentals of lighting engineering and basic engineering methods for simple building lighting systems, lighting design criteria, lighting calculations, and power budgets. (3-0). Credit 3.
Prerequisite: Junior or senior classification.

The Architecture Department offers a course for its students in Architectural Lighting (ARCH 433). The catalog description for ARCH 433 is:

Theory and practice of lighting design as an art and science; aperture design for sunlight control; selecting and locating luminaries to enhance interior and exterior surfaces and spaces. (3-0). Credit 3.0
Prerequisite: ARCH 335 or junior or senior classification in EDAS.

As Interim Head of the Department of Architecture (ARCH) at Texas A&M University, ARCH supports the development of the new Lighting Engineering for Buildings course for the newly developed BS AREN degree program.
Respectfully,

Robert Warden  
Interim Head – Department of Architecture  
College of Architecture  
Texas A&M University
Course Change Request

New Course Proposal

Date Submitted: 10/05/17 9:14 am

Viewing: AREN 330: Mechanical Systems for Buildings

Last edit: 10/05/17 8:41 pm

Changes proposed by: s.shields

Programs referencing this course: BS-AREN: Architectural Engineering

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morad Atif</td>
<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix: AREN  
Course number: 330

Department: College of Engineering

College/School: College of Engineering

Academic Level: Undergraduate

Undergraduate course level justification (Select One):
College/Program Course Level Rubric

Academic Level (alternate): Graduate

Effective term: 2018-2019

Complete Course Title:
Mechanical Systems for Buildings

Abbreviated Course Title:
MECHANICAL SYSTEMS BLDGS

Catalog course description:
Introduction to qualitative and quantitative engineering concepts of mechanical systems for buildings for architectural engineers, including HVAC systems, control of indoor air pollutants and fire suppression systems; emphasis on thermal behavior of buildings and building envelopes, human comfort requirements and psychometrics, thermal load calculations, HVAC systems/equipment, design of space air-conditioning and its relationship to architectural design, mechanical systems for indoor air quality and for fire suppression.

Prerequisites and Restrictions:
Grade of C or better in MEEN 315 or MMET 370.

Concurrent Enrollment:
No

Should catalog prerequisites / concurrent enrollment be enforced?:
Yes

In Workflow:
1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path:
1. 10/05/17 9:18 am
   Tim Jacobs (tjacobs): Approved for CLEN Department Head
2. 10/05/17 8:41 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 6:25 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 8:44 am
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:23 am
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/13/17 4:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th></th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEEN 315</td>
<td>C</td>
<td>UG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or</td>
<td>MMET 370</td>
<td>C</td>
<td>UG</td>
<td></td>
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</tr>
</tbody>
</table>

Crosslistings: No  Crosslisted With
Stacked: No  Stacked with

Semester: 3  Credit Hour(s): 3
Contact Hour(s) (per week): Lecture: 3  Lab: 0  Other: 0  Total: 3
Repeatable for credit? No
Three-peat? No
CIP/Fund Code: 1404010006
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No
Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

Required (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-AREN) Architectural Engineering</td>
</tr>
</tbody>
</table>

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No
# Course Syllabus

<table>
<thead>
<tr>
<th>Syllabus:</th>
<th>Upload syllabus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload syllabus</td>
<td>AREN 330 AREN Mechanical Systems Syllabus.docx</td>
</tr>
</tbody>
</table>

| Letters of support or other documentation | No |

| Additional information | The AREN committee is in the process of acquiring a signed course letter of support from MEEN. |

| Reviewer Comments | Sandra Williams (sandra-williams) (12/04/17 3:53 pm): UCC approved in December. |
| Reported to state? | Add |

Key: 18132
A. Course Information and Prerequisites

Title and Number: AREN 330 Mechanical Systems for Buildings
Term: Fall
Meeting Times and Locations: TBD
Mode of Instruction: Lecture; Traditional, Face-to-Face
Credit Hour: 3 hr. (3-0)
Prerequisites: MEEN 315 or MMET 370.

B. Course Description
The course introduces qualitative and quantitative engineering concepts of mechanical systems in buildings for architectural engineers, with emphasis on HVAC systems, control of indoor air pollutants, and fire suppression systems. Key topics include: thermal behavior of buildings and building envelopes, human comfort requirements and psychometrics, thermal load calculations, HVAC systems/equipment, design of space air-conditioning and its relationship to architectural design; mechanical systems for indoor air quality, and for fire suppression.

C. Instructor Information
Name: Morad R. Atif
Phone Number: 979 862 9137
E-mail Address: matif@tamu.edu
Website: http://engineering.tamu.edu/aren
Office Hours: By Appointment Only
Office Location: EABA 116

D. Student-Instructor Interaction
The instructor-student interactions will take place through: 1) lecture session; 2) email inquiries and replies; and 3) appointments made through emails or phone calls.

E. Textbook
Required:
Additional references and materials will be provided through eCampus, email, or in class as needed during the semester.

**F. COURSE LEVEL OUTCOMES**

On successful completion of this course, the student will be able to:

1. Select and use appropriate mathematical software for formulating and solving engineering problems, including graphical representations and interpretation of results.
2. Assess (quantitatively) and explain the effects of architectural engineering projects on human performance.
3. Apply key concepts and theories of thermodynamics, including the 1st and 2nd laws, to solve engineering problems.
4. Analyze and evaluate energy and thermal-related engineering problems using the 1st and 2nd laws of thermodynamics.
5. Apply key concepts and theories of fluid dynamics to solve engineering problems.
6. Analyze and evaluate fluid-related architectural engineering problems.
7. Analyze and evaluate the results of experiments within the known boundaries of the tests and materials in one or more technical areas of architectural engineering.
8. Select and explain design objectives and functional requirements based on client’s needs.
9. Determine the requirements and constraints for a building system to meet a well-defined set of client’s needs.
10. Select a design of a building system from alternatives based on constraints and requirements. Define appropriate performance measures.
11. Apply the design process to meet a well-defined set of requirements and constraints.
12. Define the types of problems that an architectural engineer is competent to address consistent with ethical and licensure standards. Explain the information required to characterize an engineering problem and formulate a solution.
13. Explain the use of multiple architectural engineering problem solving techniques for well-defined problems in multiple sub-disciplines.
14. Discuss architectural design and what the discipline offers society.
15. Demonstrate how an architectural design constraint affects the architectural engineering solutions, and vice-versa.
17. Apply basic knowledge of the current technical fields in architectural engineering to analyze relationships to one another.
18. Compare and contrast the current technical fields of architectural engineering and their relationships to one another.
19. Investigate fundamental principles and current specifications in a specialized technical area of interest.
20. Describe relationships between the elements of a specialized technical area.
21. Relate, using examples, current architectural engineering problems to specialized fields in architectural engineering.
22. Describe the current technical trends of the specialized fields in architectural engineering.
23. Exhibit interest in the professional aspect of engineering. Join the student chapter of a professional society.
G. PROGRAM LEVEL OUTCOMES

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Architectural Engineering (http://engineering.tamu.edu/aren).

- **Mathematics**: Apply knowledge of mathematics through differential equations to architectural engineering problems (Outcome 1).
- **Humanities and Social Sciences**: Recognize and incorporate cultural, historical, and social behavior considerations, including human performance, as well as knowledge of contemporary issues, in the development, analysis, and evaluation of solutions to engineering and societal problems (Outcome 3).
- **Engineering Sciences**: Analyze and solve problems in engineering sciences including: mechanics of materials, thermodynamics, fluid dynamics, and electricity (Outcome 4).
- **Experiments, Data Analysis and Interpretation**: Select and conduct engineering laboratory and field experiments and analyze and evaluate resulting data (Outcome 5).
- **Design of Building Systems**: Design a system or process in at least one of the design specialties to meet desired needs within realistic constraints, including: building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social (Outcome 6).
- **Tools for Architectural Engineering Problems**: Apply relevant knowledge, techniques, skills and modern engineering tools to identify, formulate and solve engineering problems, including problems in (Outcome 7):
  a. Designing, building, and operating mechanical systems
  b. Designing and building structural systems
  c. Designing, building and operating electrical power and lighting systems
- **Architectural Design and History**: Recognize and explain architectural design and history concepts, including historic preservation, and incorporate considerations to solve architectural engineering problems (Outcome 8).
- **Technical Specialization**: Solve problems and analyze a complex system or process in one of the three program specialties below, and state the process to become a specialist in this area (Outcome 12).
  a. designing, building, and operating mechanical systems;
  b. designing and building structural systems;
  c. designing, building and operating electrical power and lighting systems.
- **Continuous Learning**: Explain the need for continuous learning and demonstrate the ability for self-directed study without formal instructions (Outcome 15).

H. GRADING POLICIES

Exams - 50%
Team project - 30%
Assignments - 20%

**Exams**
- Exams will be held in the assigned classroom.
- Exams will cover the topics discussed in the class. In order to be adequately
prepared for the exams, students should read the relevant assigned material, additional notes provided by the instructor or in the class, and class notes.

- Exams will typically be questions covering lecture materials from class.
- Makeup exam time (ONLY if allowed for an excused absence, see TAMU Student rule 7, not hunting, or a wedding, or a Disney trip, or…) will be arranged with the instructor and will consist of a comprehensive closed-book, closed-note format.

**Team Project**
- Will be announced in class

**Conversion of numerical grade to letter grade will be made as follows:**

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% and above</td>
<td>A</td>
</tr>
<tr>
<td>80% to below 90%</td>
<td>B</td>
</tr>
<tr>
<td>70% to below 80%</td>
<td>C</td>
</tr>
<tr>
<td>60% to below 70%</td>
<td>D</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

**I. CALENDAR OF TOPICS AND IMPORTANT DATES**

  a. Though scheduled, instructor will verify exam dates & venue

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Overview of Mechanical Systems in Buildings</td>
</tr>
<tr>
<td>#2</td>
<td>Thermal Behavior of Buildings</td>
</tr>
<tr>
<td>#3</td>
<td>Thermal comfort requirements in Buildings and Psychometrics</td>
</tr>
<tr>
<td>#4</td>
<td>Thermal Loads Calculations</td>
</tr>
<tr>
<td>#5</td>
<td>Thermal Load Calculations</td>
</tr>
<tr>
<td>#6</td>
<td>Fundamentals of Heating, Cooling, and Ventilation Systems in Buildings</td>
</tr>
<tr>
<td>#7</td>
<td>HVAC Equipment</td>
</tr>
<tr>
<td>#8</td>
<td>Basics of HVAC Design and Validation</td>
</tr>
<tr>
<td>#9</td>
<td>Basics of HVAC Design and Validation</td>
</tr>
<tr>
<td>#10</td>
<td>HVAC Economics and Energy Efficiency</td>
</tr>
<tr>
<td>#11</td>
<td>Thermal behavior of Engineered-Building Envelope Systems</td>
</tr>
<tr>
<td>#12</td>
<td>Architectural Design Constraints &amp; HVAC Systems</td>
</tr>
<tr>
<td>#13</td>
<td>Indoor Air Quality and Ventilation Rates</td>
</tr>
<tr>
<td>#14</td>
<td>Mechanical Systems for Fire Safety</td>
</tr>
</tbody>
</table>
J. SPECIAL PROVISIONS

1. Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Disability Services, located in the Disability Services Building at White Creek on west campus or call 979-845-1637. For more information, visit http://disability.tamu.edu.

2. Academic Integrity
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If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.

5. Copyright
Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

6. Defacement of University Property
"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)". The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 09/26/17 9:00 am

Viewing: AREN 399: High Impact Experience for Architectural Engineers

Last edit: 09/26/17 9:45 pm
Changes proposed by: s.shields

Programs referencing this course:

- BS-AREN: Architectural Engineering

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morad Atif</td>
<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix: AREN  
Course number: 399

Department: College of Engineering
College/School: College of Engineering
Academic Level: Undergraduate
Undergraduate course level justification (Select One): 

Academic Level (alternate): Graduate
Effective term: 2018-2019

Complete Course Title: High Impact Experience for Architectural Engineers
Abbreviated Course Title: HIGH IMPACT EXPERIENCE AREN

Catalog course description:
Participation in an approved high-impact learning experience; reflection on professional outcomes from the National Society of Professional Engineers’ Engineering Body of Knowledge; documentation and self-assessment of learning experience at mid-curriculum point.

Prerequisites and Restrictions:
Junior or senior classification.

Concurrent Enrollment: No
Should catalog prerequisites / concurrent enrollment be enforced: No

In Workflow:
1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path:
1. 09/26/17 8:33 pm
   Tim Jacobs (jjacobs):
   Approved for CLEN Department Head
2. 09/26/17 9:45 pm
   Sandra Williams (sandra-williams):
   Approved for Curricular Services Review
3. 10/25/17 7:25 pm
   Eileen Hoy (ehoy):
   Approved for EN Committee Preparer UG
4. 10/27/17 8:44 am
   Prasad Enjeti (enjeti):
   Approved for EN Committee Chair UG
5. 10/27/17 9:23 am
   Prasad Enjeti (enjeti):
   Approved for EN College Dean UG
6. 11/13/17 4:53 pm
   Sandra Williams (sandra-williams):
   Approved for UCC Preparer
7. 12/04/17 3:53 pm
   Sandra Williams (sandra-williams):
   Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/#
### Crosslistings

<table>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

### Semester Information

- **Credit Hour(s):** 0
- **Contact Hour(s):** (per week): 0
- **Lecture:** 0
- **Lab:** 0
- **Other:** 0
- **Total:** 0

### Repeatable for credit?

- **No**

### Three-peat?

- **No**

### CIP/Fund Code

- **1404010006**

### Default Grade Mode

- **Satisfactory/ Unsatisfactory(s)**

### Alternate Grade Modes

- **Independent Study**

### Method of instruction

- **Independent Study**

### Will this course be taught as a distance education course?

- **No**

### Is 100% of this course going to be taught in Texas?

- **No**

### Will classroom space be needed for this course?

- **No**

### This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-AREN) Architectural Engineering</td>
</tr>
</tbody>
</table>

### Course Syllabus

- **Syllabus:** Upload syllabus
- **Upload syllabus:** [AREN 399 HIP for AR ENGRs Syllabus.docx](https://nextcatalog.tamu.edu/courseleaf/approve/)

---

https://nextcatalog.tamu.edu/courseleaf/approve/

2/3
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<td>Additional information</td>
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<td>Sandra Williams (sandra-williams) (09/26/17 9:45 pm): Update received.</td>
</tr>
<tr>
<td></td>
<td>Sandra Williams (sandra-williams) (12/04/17 3:53 pm): UCC approved in December.</td>
</tr>
<tr>
<td>Reported to state?</td>
<td>Add</td>
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</table>
A. COURSE INFORMATION AND PREREQUISITES

Title and Number: AREN 399:500 High Impact Experience for Architectural Engineers

Term: Summer
Meeting Times and Locations: TBD
Mode of Instruction: Independent Study
Credit Hour: 0 hr. (0-0)
Prerequisites: Junior or senior classification in AREN

B. COURSE DESCRIPTION

Student participation in an approved high-impact learning experience; reflection on professional outcomes from the National Society of Professional Engineers’ Engineering Body of Knowledge; documentation and self-assessment of learning experience at mid-curriculum point.

C. INSTRUCTOR INFORMATION

Name:
Phone Number:
E-mail Address:
Website: http://engineering.tamu.edu/aren
Office Hours:
Office Location:

D. STUDENT-INSTRUCTOR INTERACTION

The instructor-student interactions will take place through: 1) lecture session; 2) email inquiry and replies; and 3) appointments made through emails or phone calls.

E. TEXTBOOK

There is no textbook for this course. Class resources will be posted on the course website at http://ecampus.tamu.edu to include the following:

- Description of the Reflection/Critical Thinking assignment.
- Texas Board of Professional Engineers (TBPE) Supplementary Experience Record (SER) form for documentation of high-impact learning experience. A template and example will be provided.
- Evaluation rubric.
F. COURSE LEVEL OUTCOMES

On successful completion of this course, the student will be able to:

1. Critique and draw conclusions from prior learning and experience in order to guide academic and professional growth.
2. Explain global issues related to professional practice, infrastructure, environment, and service populations (as they arise across cultures, languages, or countries).
3. Discuss business topics such as legal forms of ownership, organizational structure, finance, marketing and sales, billable time, overhead, profit, and asset management.
4. Identify the codes of ethics that apply to engineering. Identify an engineering situation that is or could become an ethical dilemma.

G. PROGRAM LEVEL OUTCOMES

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Interdisciplinary Engineering with a specialization in Architectural Engineering (http://engineering.tamu.edu/aren)

- **Continuous Learning**: Explain the need for continuous learning and demonstrate the ability for self-directed study without formal instructions (Outcome 15).
- **Professional Practice**: Explain the role of professional licensure, globalization, business, and ethics, which govern engineering practice (Outcome 16)

H. Grading Policies

This course will be graded on a pass/fail (S/U) basis only.

Criteria for achieving a passing grade are successful completion of all of the following assignments listed below by due date. The course instructor will determine whether any submission will count as “successful completion” or “incomplete.” Submissions deemed “incomplete” will be returned to the student for revision and re-submission within 7 days; only 1 opportunity for revision will be given for any assignment. A second submission deemed “incomplete” will result in a failing grade of “U,” and the student will be required to repeat the course.

I. CALENDAR OF TOPICS AND IMPORTANT DATES - TBD for Fall 2017

This course requires you to participate in an approved high-impact learning experience in support of your B.S. in Architectural Engineering (AREN) degree. Your high-impact learning experience should be one of the following:

- Internship
- Undergraduate Research
- Engineers without Borders Project (http://www.ewbtamu.org/projects/)
- Design competitions, as approved by the department
- Other high-impact learning experience as approved by the department

You will register for the appropriate assigned section number to your pre-approved high-impact learning experience.
Due on 1st Class Day

- Pre-approval of AREN 399 High Impact Professional Development from the course instructor.
- Identification of the professional supervisor/mentor who will oversee your work, certify hours worked, and aid in assessment of your final deliverables (see “Grading Policies”).

Due 1 week before 1st Final Exam Day

- Documentation of activities performed in high-impact learning experience using TBPE SER form.
- Reflection/Critical Thinking assignment. The assignment encompasses a meaningful self-reflection piece that discusses the impact of the high-impact learning experience characteristics and the overall experience on the student’s erudition. The self-reflection piece can be a written (traditional) essay, a video or online blog, a series of journal entries, or some other accepted and approved form as decided by the course instructor. The self-reflection piece will be evaluated by the supervisor/mentor that oversees the high-impact learning experience.

J. SPECIAL PROVISIONS

1. Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Disability Services, located in the Disability Services Building at White Creek on west campus or call 979-845-1637. For more information, visit http://disability.tamu.edu.

2. Academic Integrity
Misconduct in research or scholarship includes fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data. It is very important to read other people's work and to use their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge. When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

If you use someone else's idea without using his or her specific words, this is called paraphrasing. When you paraphrase, you are expected to indicate the source of the idea (the author and publication date, but not a page number). This allows a reader to find the source of the ideas, verify that you have accurately represented them, and obtain additional information about those ideas if necessary. If you use someone else's exact words, this is called quoting. When you quote, you are expected to enclose the words in quotation marks, and indicate the source of the quote (the author, publication date, and page number). Plagiarism also applies to information found on the web; it is equally important to cite a web source and the rules above pertain. Consequently, if there are not quotation marks around the text and no source is cited, instructors will assume that you intend for them to
conclude that any ideas, especially the specific words, that you presented in your work are your own. Thus, if the idea or the exact words are taken from another source and you do not indicate the source of the idea, you are representing another person’s ideas as if they were your own. This is called **plagiarism** and is a very serious offense.

Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, is sufficient grounds to initiate an academic dishonesty case. For additional information please visit: [http://aggiehonor.tamu.edu/](http://aggiehonor.tamu.edu/).

*“An Aggie does not lie, cheat, or steal, or tolerate those who do.”*

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

3. **Absences**

Rules concerning excused absences may be found at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). In particular, except for absences due to religious obligations, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the coming semester may be found at [http://student-rules.tamu.edu/append4](http://student-rules.tamu.edu/append4).

If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If the instructor has a regularly scheduled make up exam, students are expected to attend unless they have a university approved excuse. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student Rule 7 for details [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code.

1) Participation in an activity that is required for a class and appears on the university authorized activity list at [https://stuactonline.tamu.edu/app/sponsauth/index](https://stuactonline.tamu.edu/app/sponsauth/index)

2) Death or major illness in a student's immediate family.

3) Illness of a dependent family member.

4) Participation in legal proceedings or administrative procedures that require a student's presence.

5) Religious holy day. NOTE: Prior notification is NOT required.

6) Injury or illness that is too severe or contagious for the student to attend class.
a) Injury or illness of three or more class days:
   Student will provide a medical confirmation note from his or her medical provider within one week of the last date of the absence (see Student Rules 7.1.6.1)

b) Injury or illness of less than three class days:
   Student will provide one or both of these (at instructor’s discretion), within one week of the last date of the absence:
   (i.) Texas A&M University Explanatory Statement for Absence from Class form available at http://attendance.tamu.edu
   (ii.) Confirmation of visit to a health care professional affirming date and time of visit.

c) An absence for a non-acute medical service does not constitute an excused absence.

7) Required participation in military duties.
8) Mandatory admission interviews for professional or graduate school that cannot be rescheduled.
9) Mandatory participation as a student-athlete in NCAA-sanctioned competition.
10) In accordance with Title IX of the Educational Amendments of 1972, Texas A&M University shall treat pregnancy (childbirth, false pregnancy, termination of pregnancy and recovery therefrom) and related conditions as a justification for an excused absence for so long a period of time as is deemed medically necessary by the student’s physician. Requests for excused absence related to pregnancy should be directed to the instructor.

Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

4. Disruptive Behavior
   If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.

5. Copyright
   Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

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Course Change Request

New Course Proposal

Date Submitted: 10/03/17 2:16 pm

Viewing: AREN 401 : Architectural Engineering Design I

Last edit: 10/03/17 3:55 pm

Changes proposed by: s.shields

Programs referencing this course

BS-AREN: Architectural Engineering

Faculty Senate Number

Contact(s)

<table>
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<tr>
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<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix  AREN  Course number  401
Department  College of Engineering
College/School  College of Engineering
Academic Level  Undergraduate
Undergraduate course level justification (Select One)
Prerequisites
All prerequisites will be enforced through COMPASS.

Academic Level
(graduate)
Effective term  2018-2019
Complete Course Title
Architectural Engineering Design I
Abbreviated Course Title
AREN CAPSTONE I

Catalog course description
Instruction and practice in the design process applied to an architectural engineering design project; application of establishing customer need, determining requirements in terms of function and performance, developing alternative design concepts, performing trade-off studies among performance, cost and schedule, embodiment and detail design and the iteration of the above steps; major architectural engineering design project.

Prerequisites and Restrictions
Grade of C or better in AREN 300, AREN 330, and CVEN 345.

Concurrent Enrollment  No
Should catalog prerequisites / concurrent enrollment be enforced?  Yes

In Workflow
1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 10/03/17 2:38 pm
   Tim Jacobs (tjacob): Approved for CLEN Department Head
2. 10/03/17 3:56 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 7:26 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 8:45 am
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:24 am
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/13/17 4:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:53 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair
### Enforced Prerequisites / Concurrent Enrollment

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**Crosslistings**: No Crosslisted With

**Stacked**: No Stacked with

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<td>Repeatability?</td>
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**CIP/Fund Code**: 1404010006

**Default Grade Mode**: Letter Grade(G)

**Alternate Grade Modes**: Satisfactory/Unsatisfactory

**Method of instruction**: Lecture and Laboratory

**Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)**: No

**Will this course be taught as a distance education course?**: No

**Is 100% of this course going to be taught in Texas?**: Yes

**Will classroom space be needed for this course?**: Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
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<tr>
<td>(BS-AREN) Architectural Engineering</td>
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</tbody>
</table>

### Required (select program)

### Elective (select program)

**Has/will this course be(en) submitted for core curriculum consideration?**: No

**Has/will this course be(en) submitted for Writing or Communication consideration?**: No

**Has/will this course be(en) submitted for**
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: AREN 401 Capstone I Syllabus.docx

Letters of support or other documentation: No

Additional information

Reviewer Comments

Sandra Williams (sandra-williams) (09/25/17 4:15 pm): Rollback: Syllabus has wrong Aggie Honor Code website link and weights to grades are not included. Form: please update catalog course description to comply with the catalog style guide for course descriptions http://registrartamu.edu/Our-Services/Curricular-Services/Catalog/Style-Guide-for-Catalog-Course-Descriptions.

Tim Jacobs (tjjacobs) (09/26/17 8:36 pm): Rollback: MEEN 436 is only offered once/year. I suggest making it a co-requisite, to avoid any delays in students taking the course. Remove "Approval of department head" as a pre-requisite; we can deal with overrides on a consistent policy basis.

s.shields (09/27/17 12:10 pm): Dr. Jacobs - Thank you for the pre/co-requisite suggestion for MEEN 436. The new AREN 401 Capstone course is a project base course that will require students to already have a working knowledge of HVAC. For this reason, MEEN 436 was left as a prereq.

Tim Jacobs (tjjacobs) (09/29/17 8:13 pm): Rollback: Modify pre-reqs per discussion.

Tim Jacobs (tjjacobs) (10/03/17 2:06 pm): Rollback: Per our email discussion, 10/3/2017.

Sandra Williams (sandra-williams) (10/03/17 3:56 pm): Update received.

Sandra Williams (sandra-williams) (12/04/17 3:53 pm): UCC approved in December.

Reported to state?

Add
A. COURSE INFORMATION AND PREREQUISITES

Title and Number: AREN 401:500 Architectural Engineering Design I
Term: Fall
Meeting Times and Locations: TBD
Mode of Instruction: Lecture and Lab; Traditional, Face-to-Face
Credit Hour: 3 hr. (2-3)
Prerequisites: AREN 300, AREN 330, and CVEN 345.

B. COURSE DESCRIPTION

Instruction and practice in the following design process applied to an interdisciplinary design project: establish the customer need; determine requirements in terms of function (what) and performance (how well); develop alternative design concepts; perform trade-off studies among performance, cost and schedule; embodiment and detail design; iterate the above steps; major interdisciplinary design project. This course will provide students with a venue for learning about and applying the fundamentals of engineering design. Students will achieve this through (1) lectures and in-class activities relating to the fundamentals of design and (2) a comprehensive project in which you apply these principles to a real design problem.

C. INSTRUCTOR INFORMATION

Name:
Phone Number:
E-mail Address:
Website: http://engineering.tamu.edu/aren
Office Hours:
Office Location:

D. STUDENT-INSTRUCTOR INTERACTION

The instructor-student interactions will take place through: 1) lecture session; 2) email inquiry and replies; and 3) appointments made through emails or phone calls.

E. TEXTBOOK

No textbook required

There are many useful texts that you can use to better understand the design process:
1. Product Design and Development, 5th ed., by Karl Ulrich and Steven Eppinger
3. The Mechanical Design Process, 4th ed., by David Ullman
Additional references and materials will be provided through eCampus, email, or in class as needed during the semester.

**F. COURSE LEVEL OUTCOMES**

On successful completion of this course, the student will be able to:

1. Analyze engineering projects to best respond to societal values, needs, and behaviors.
2. Analyze and articulate how the importance of social sciences impacts an engineering project.
3. Draw conclusions in a qualitative and quantitative manner on the effects of architectural engineering projects on human performance.
4. Develop appropriate design objectives and functional requirements based on client’s needs.
5. Determine and propose requirements and constraints for a building system to meet a realistic set of client’s needs.
6. Evaluate and critique a design of a building system from alternatives based on constraints, requirements, and comprehensive performance measures. Propose a final building system design.
7. Design a building system to meet desired needs within realistic constraints including building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social.
8. Synthesize from disparate information a clear and comprehensive statement of an architectural engineering problem.
9. Apply, working independently and in teams, standard architectural engineering problem solving techniques with high levels of uncertainty and poor problem definition.
10. Analyze and critique information, perspectives, experiences, and personal thought processes while analyzing problems and synthesizing problem solving approaches.
11. Evaluate and apply the selection of appropriate tools and computation methods to solve building and architectural engineering problems.
12. Distinguish between uncertainties that are data-based and those that are knowledge-based using examples of building systems.
13. Explain the significance of uncertainties on the performance of a building system design.
14. Elaborate on the importance of architectural design in today’s world.
15. Analyze the impact of historical achievements on architectural design.
16. Develop strategies through collaboration with the architect to solve/minimize one or more design constraints in the architectural engineering process and solutions.
17. Analyze and evaluate the current trends in architectural design and formulate responses for potential impacts in architectural engineering.
18. Evaluate performance under current resource assignments and develop alternate resource allocations to keep project on track.
19. Analyze project schedules and develop construction sequences for implementation of those schedules on a large building system project.
20. Analyze a cost estimate for a building system project.
21. Assess the impact of applicable health and safety regulations and standards on the management of an architectural engineering project.

22. Analyze and evaluate compliance of building system design to building codes, regulations, and standards.

23. Analyze well-defined problems in at least two building system areas in architectural engineering.

24. Solve problems in at least two building system areas in architectural engineering.

25. Integrate contributions from at least two technical areas to solve an ill-defined architectural engineering problem.

26. Integrate contributions from at least two technical areas, as well as constraints from architectural design, to solve a realistic architectural design problem.

27. Develop and explain a list of best practices and a personal program of continued development to improve skills necessary for sustainable practice. Critique a commonly used sustainability recognition program for its strengths and weaknesses in encouraging principles of sustainability in design.

28. Analyze building systems for sustainable and high-performance buildings. Apply high-performance building principles or standards to an architectural engineering project.

29. Design a complex building system, process, or project to perform in a sustainable manner and with a positive impact on building performance. Describe how any specific design decision can incorporate high-performance building systems principles. Engage in professional societies as networking opportunity.

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36. Supports a constructive team climate by doing all of the following:
   • Treats team members respectfully.
   • Communicates and conveys a positive attitude about the team and its work.
   • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it.
   • Provides assistance and/or encouragement to team members.

37. Evaluate the composition, organization, and performance of an interdisciplinary team. Reflect upon your role on a interdisciplinary team and provide a clear rationale for your team's integrative approach.

38. Organize and direct the efforts of a group using leadership principles and attitudes. Analyze the effort to determine which attitudes were most conducive to its effective
accomplishment.
39. Analyze and synthesize prior knowledge and experiences in order to apply resulting new approaches to academic and professional growth.

G. PROGRAM LEVEL OUTCOMES

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Architectural Engineering (http://engineering.tamu.edu/aren).

- **Humanities & Social Sciences**: Recognize and incorporate cultural, historical, and social behavior considerations, including human performance, as well as knowledge of contemporary issues, in the development, analysis, and evaluation of solutions to engineering and societal problems (Outcome 3).

- **Design of Building Systems**: Design a system or process in at least one of the design specialties to meet desired needs within realistic constraints, including: building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social (Outcome 6).

- **Tools for Architectural Engineering Problems**: Apply relevant knowledge, techniques, skills and modern engineering tools to identify, formulate and solve engineering problems (Outcome 7).

- **Architectural Design and History**: Recognize and explain architectural design and history concepts, including historic preservation, and incorporate considerations to solve architectural engineering problems (Outcome 8).

- **Project and Construction Management**: Apply basic principles of project management and construction management to the design, construction and operation of building systems, according to building regulations and standards (Outcome 9).

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- **Principles of Sustainable and High-Performance Buildings**: Identify and articulate the importance of sustainability to architectural engineering and apply its principles, including those related to high-performance buildings, energy efficiency, materials selection, and embedded systems, to the design of building systems (Outcome 11).

- **Technical Specialization**: Solve problems and analyze a complex system or process in one of the three program specialties – designing, building, and operating mechanical systems; designing and building structural systems; designing, building and operating electrical power and lighting systems – and state the process to become a specialist in this area (Outcome 12).

- **Communication**: Organize and deliver effective verbal, written, quantitative and graphical communications, including through architectural drawings (Outcome 13).

- **Interdisciplinary Teams**: Function in interdisciplinary teams for the design and construction of buildings and apply best practices of leadership to direct such teams to solve problems (Outcome 14).

- **Continuous Learning**: Explain the need for continuous learning and demonstrate the ability for self-directed study without formal instructions (Outcome 15).
H. Grading Policies

- **In-class quizzes.** Individual effort. Usually 5-15 minutes long.
- **In-class assignments.** Small teams. Submitted at end of lecture.
- **Take-home assignments.** Small assignments/projects to be completed outside of lecture. They may be individual effort or for small teams (possibly your studio project team), depending on the assignment. Typically they will be submitted through eCampus.
- **Studio section design projects.** Major project in which you will apply systematic design methods and processes to a real design problem. Completed in teams. Deliverables include a semester report and a presentation (design review). These contribute to a student’s studio grade only.
- **Final Exam.** Oral exam given by lecture and studio instructors. Comprehensive examination of all material covered in studio and lecture. This is WAIVED for students who meet all studio requirements. This contributes to your studio grade only.

- Lecture Grade .................................................. 20%
- Studio Grade ..................................................... 80%

A student’s grade for AREN 401 is a combination of grades from the lecture and studio portions of the course. The studio instructor will assign a baseline grade, which the lecture instructor will modify based on your performance in lecture.

*Lecture Grade*

Each graded activity in lecture (quizzes, in-class and take-home assignments) will assess a student’s skills on one or more of the course learning outcomes. Students will receive grades that reflect the degree to which each demonstrates an understanding of the topic being evaluated. A student's lecture grade is the average of all these scores.

*Studio Grade*

A student’s studio grade will be based on his/her performance on the studio design project. It will be determined based on the documented guidelines given by the student’s studio instructor. However, all studio instructors will evaluate students with primary emphasis on the following factors:

- Quality of design concept
- Proper application of design methods and processes
- Level of individual participation
- Communication quality with instructor and sponsors (oral, written, technical)

Conversion of numerical grade to letter grade will be made as follows:

- 90% and above - A
- 80% to below 90% - B
- 70% to below 80% - C
- 60% to below 70% - D
- Below 60% - F
I. SPECIAL PROVISIONS

1. Americans with Disabilities Act (ADA) Policy Statement
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Disability Services, located in the Disability Services Building at White Creek on west campus or call 979-845-1637. For more information, visit http://disability.tamu.edu.

2. Academic Integrity
Misconduct in research or scholarship includes fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data. It is very important to read other people's work and to use their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge. When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

If you use someone else's idea without using his or her specific words, this is called paraphrasing. When you paraphrase, you are expected to indicate the source of the idea (the author and publication date, but not a page number). This allows a reader to find the source of the ideas, verify that you have accurately represented them, and obtain additional information about those ideas if necessary. If you use someone else's exact words, this is called quoting. When you quote, you are expected to enclose the words in quotation marks, and indicate the source of the quote (the author, publication date, and page number). Plagiarism also applies to information found on the web; it is equally important to cite a web source and the rules above pertain. Consequently, if there are not quotation marks around the text and no source is cited, instructors will assume that you intend for them to conclude that any ideas, especially the specific words, that you presented in your work are your own. Thus, if the idea or the exact words are taken from another source and you do not indicate the source of the idea, you are representing another person's ideas as if they were your own. This is called plagiarism and is a very serious offense.

Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, is sufficient grounds to initiate an academic dishonesty case. For additional information please visit: http://aggiehonor.tamu.edu/.

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.
3. Absences

Rules concerning excused absences may be found at http://student-rules.tamu.edu/rule07. In particular, except for absences due to religious obligations, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the coming semester may be found at http://student-rules.tamu.edu/append4.

If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If the instructor has a regularly scheduled make up exam, students are expected to attend unless they have a university approved excuse. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student Rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code.

1) Participation in an activity that is required for a class and appears on the university authorized activity list at https://stuactonline.tamu.edu/app/sponsauth/index
2) Death or major illness in a student's immediate family.
3) Illness of a dependent family member.
4) Participation in legal proceedings or administrative procedures that require a student's presence.
5) Religious holy day. NOTE: Prior notification is NOT required.
6) Injury or illness that is too severe or contagious for the student to attend class.
   a) Injury or illness of three or more class days:
      Student will provide a medical confirmation note from his or her medical provider within one week of the last date of the absence (see Student Rules 7.1.6.1)
   b) Injury or illness of less than three class days:
      Student will provide one or both of these (at instructor’s discretion), within one week of the last date of the absence:
      (i.) Texas A&M University Explanatory Statement for Absence from Class form available at http://attendance.tamu.edu
      (ii.) Confirmation of visit to a health care professional affirming date and time of visit.
   c) An absence for a non-acute medical service does not constitute an excused absence.
7) Required participation in military duties.
8) Mandatory admission interviews for professional or graduate school that cannot be rescheduled.
9) Mandatory participation as a student-athlete in NCAA-sanctioned competition.
10) In accordance with Title IX of the Educational Amendments of 1972, Texas A&M University shall treat pregnancy (childbirth, false pregnancy, termination of pregnancy and recovery therefrom) and related conditions as a justification for an excused absence for so long a period of time as is deemed medically necessary by the student’s physician. Requests for excused absence related to pregnancy should be directed to the instructor.
Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

4. **Disruptive Behavior**
If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at http://student-rules.tamu.edu/rule21.

5. **Copyright**
Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

6. **Defacement of University Property**
"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)". The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 09/26/17 9:01 pm

Viewing: AREN 402: Architectural Engineering Design II

Last edit: 09/28/17 8:27 am

Changes proposed by: s.shields

Programs referencing this course

BS-AREN: Architectural Engineering

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morad Atif</td>
<td><a href="mailto:matif@tamu.edu">matif@tamu.edu</a></td>
<td>979-862-9137</td>
</tr>
</tbody>
</table>

Course prefix       AREN  
Course number       402

Department          College of Engineering
College/School      College of Engineering
Academic Level      Undergraduate

Undergraduate course level justification (Select One)

Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level

Graduate

Effective term

2018-2019

Complete Course Title

Architectural Engineering Design II

Abbreviated Course Title

AREN CAPSTONE II

Catalog course description

Application and extension of fundamentals of engineering design, product detail, and design development process, including case studies; emphasis on project management, marketing considerations, manufacturing detailed design specifications, failure modes, applications of codes and standards, selection of design margins, product (component) development guidelines, intellectual property, product liability and ethical responsibility; major architectural engineering design project.

Prerequisites and Restrictions

Grade of C or better in AREN 401.

Concurrent Enrollment

No

Should catalog prerequisites / concurrent enrollment be enforced?

Yes

In Workflow

1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path

1. 09/27/17 9:01 pm
   Tim Jacobs (tj jacobs): Approved for CLEN Department Head
2. 09/28/17 8:28 am
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 7:26 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 8:45 am
   Prasad Enjeti (enjeti1): Approved for EN Committee Chair UG
5. 10/27/17 9:24 am
   Prasad Enjeti (enjeti1): Approved for EN College Dean UG
6. 11/13/17 4:54 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:54 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>)</th>
<th>Concurrency?</th>
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<tr>
<td></td>
<td>AREN 401</td>
<td>C</td>
<td>UG</td>
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</tbody>
</table>

Crosslistings: No, Crosslisted With

Stacked: No, Stacked with

Semester: 3
Credit Hour(s): Contact Hour(s) (per week):
Lecture: 2
Lab: 3
Other: 0
Total: 5

Repeatable for credit? No
Three-peat? No
CIP/Fund Code: 1404010006
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture and Laboratory

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Required (select program)</th>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-AREN) Architectural Engineering</td>
<td></td>
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</tbody>
</table>

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No
# Course Syllabus

<table>
<thead>
<tr>
<th>Syllabus:</th>
<th>Upload syllabus</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>AREN 402 Capstone II Syllabus.docx</td>
</tr>
<tr>
<td>Letters of support or other documentation</td>
<td>No</td>
</tr>
<tr>
<td>Additional information</td>
<td></td>
</tr>
</tbody>
</table>
| Reviewer Comments | Sandra Williams (sandra-williams) (09/25/17 4:17 pm): Rollback: Syllabus has wrong Aggie Honor Code website link and weights to grades are not included. Form: please update catalog course description to comply with the catalog style guide for course descriptions http://registrar.tamu.edu/Our-Services/Curricular-Services/Catalog/Style-Guide-for-Catalog-Course-Descriptions.  
Tim Jacobs (tijacobs) (09/26/17 8:36 pm): Rollback: Remove "or approval of department head" from the prerequisite line; we can handle overrides on a consistent policy basis.  
Sandra Williams (sandra-williams) (09/28/17 8:28 am): Updates received.  
Sandra Williams (sandra-williams) (12/04/17 3:54 pm): UCC approved in December. |
| Reported to state? | Add                                                                 |
A. COURSE INFORMATION AND PREREQUISITES

Title and Number: AREN 402:500 Interdisciplinary Design II
Term: Spring, 2019
Meeting Times and Locations: TBD
Mode of Instruction: Lecture and Lab; Traditional, Face-to-Face
Credit Hour: 3 hr. (2-3)
Prerequisites: AREN 401

B. COURSE DESCRIPTION

Product detail and design development process including case studies; may include project management, marketing considerations, manufacturing detailed design specifications; failure modes, applications of codes and standards, selection of design margins; product (component) development guidelines; intellectual property, product liability and ethical responsibility. This course will provide you with a venue for learning about and applying the fundamentals of engineering design. Students will achieve this through (1) lectures and in-class activities relating to the fundamentals of design and (2) a comprehensive project in which you apply these principles to a real design problem.

C. INSTRUCTOR INFORMATION

Name:
Phone Number:
E-mail Address:
Website: http://engineering.tamu.edu/aren
Office Hours:
Office Location:

D. STUDENT-INSTRUCTOR INTERACTION

The instructor-student interactions will take place through: 1) lecture session; 2) email inquiry and replies; and 3) appointments made through emails or phone calls.

E. TEXTBOOK

No textbook required

There are many useful texts that you can use to better understand the design process:
1. Product Design and Development, 5th ed., by Karl Ulrich and Steven Eppinger
Additional references and materials will be provided through eCampus, email, or in class as needed during the semester.

F. COURSE LEVEL OUTCOMES

On successful completion of this course, the student will be able to:

1. Analyze engineering projects to best respond to societal values, needs, and behaviors.
2. Analyze and articulate how the importance of social sciences impacts an engineering project.
3. Draw conclusions in a qualitative and quantitative manner on the effects of architectural engineering projects on human performance.
4. Develop appropriate design objectives and functional requirements based on client’s needs.
5. Determine and propose requirements and constraints for a building system to meet a realistic set of client’s needs.
6. Evaluate and critique a design of a building system from alternatives based on constraints, requirements, and comprehensive performance measures. Propose a final building system design.
7. Design a building system to meet desired needs within realistic constraints including building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social.
8. Apply, working independently and in teams, standard architectural engineering problem solving techniques with high levels of uncertainty and poor problem definition.
9. Analyze and critique information, perspectives, experiences, and personal thought processes while analyzing problems and synthesizing problem solving approaches.
10. Evaluate and apply the selection of appropriate tools and computation methods to solve building and architectural engineering problems.
11. Distinguish between uncertainties that are data-based and those that are knowledge-based using examples of building systems.
12. Explain the significance of uncertainties on the performance of a building system design.
13. Elaborate on the importance of architectural design in today’s world.
14. Analyze the impact of historical achievements on architectural design.
15. Develop strategies through collaboration with the architect to solve/minimize one or more design constraints in the architectural engineering process and solutions.
16. Analyze and evaluate the current trends in architectural design and formulate responses for potential impacts in architectural engineering.
17. Evaluate performance under current resource assignments and develop alternate resource allocations to keep project on track.
18. Analyze project schedules and develop construction sequences for implementation of those schedules on a large building system project.
19. Analyze a cost estimate for a building system project.
20. Assess the impact of applicable health and safety regulations and standards on the
management of an architectural engineering project.

21. Analyze and evaluate compliance of building system design to building codes, regulations, and standards.

22. Analyze well-defined problems in at least two building system areas in architectural engineering.

23. Solve problems in at least two building system areas in architectural engineering.

24. Integrate contributions from at least two technical areas to solve an ill-defined architectural engineering problem.

25. Integrate contributions from at least two technical areas, as well as constraints from architectural design, to solve a realistic architectural design problem.

26. Develop and explain a list of best practices and a personal program of continued development to improve skills necessary for sustainable practice. Critique a commonly used sustainability recognition program for its strengths and weaknesses in encouraging principles of sustainability in design.

27. Analyze building systems for sustainable and high-performance buildings. Apply high-performance building principles or standards to an architectural engineering project.

28. Design a complex building system, process, or project to perform in a sustainable manner and with a positive impact on building performance. Describe how any specific design decision can incorporate high-performance building systems principles. Engage in professional societies as networking opportunity.

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37. Organize and direct the efforts of a group using leadership principles and attitudes. Analyze the effort to determine which attitudes were most conducive to its effective accomplishment.
38. Analyze and synthesize prior knowledge and experiences in order to apply resulting new approaches to academic and professional growth.

39. Apply business and engineering management practices in an engineering project, including responsibilities to clients and public.

G. PROGRAM LEVEL OUTCOMES

The course outcomes listed above target the following Program Level Outcomes of the Bachelor of Science in Interdisciplinary Engineering with a specialization in Architectural Engineering (http://engineering.tamu.edu/aren)

- **Humanities & Social Sciences**: Recognize and incorporate cultural, historical, and social behavior considerations, including human performance, as well as knowledge of contemporary issues, in the development, analysis, and evaluation of solutions to engineering and societal problems (Outcome 3).

- **Design of Building Systems**: Design a system or process in at least one of the design specialties to meet desired needs within realistic constraints, including: building codes and regulations, sustainability, health and safety, comfort, ethical, environmental, constructability, economic, and social (Outcome 6).

- **Tools for Architectural Engineering Problems**: Apply relevant knowledge, techniques, skills and modern engineering tools to identify, formulate and solve engineering problems (Outcome 7).

- **Architectural Design and History**: Recognize and explain architectural design and history concepts, including historic preservation, and incorporate considerations to solve architectural engineering problems (Outcome 8).

- **Project and Construction Management**: Apply basic principles of project management and construction management to the design, construction and operation of building systems, according to building regulations and standards (Outcome 9).

- **Integration of Building Systems**: Solve architectural engineering problems by integrating knowledge from at least two of the design specialties – mechanical, structural, or electrical – with knowledge of architectural design or construction management (Outcome 10).

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- **Technical Specialization**: Solve problems and analyze a complex system or process in one of the three program specialties – designing, building, and operating mechanical systems; designing and building structural systems; designing, building and operating electrical power and lighting systems – and state the process to become a specialist in this area (Outcome 12).

- **Communication**: Organize and deliver effective verbal, written, quantitative and graphical communications, including through architectural drawings (Outcome 13).

- **Interdisciplinary Teams**: Function in interdisciplinary teams for the design and construction of buildings and apply best practices of leadership to direct such teams to solve problems (Outcome 14).

- **Continuous Learning**: Explain the need for continuous learning and demonstrate the
ability for self-directed study without formal instructions (Outcome 15).

- **Professional Practice**: Explain the role of professional licensure, globalization, business, and ethics, which govern engineering practice (Outcome 16).

**H. GRADING POLICIES**

- **In-class quizzes**: Individual effort. Usually 5-15 minutes long.
- **In-class assignments**: Small teams. Submitted at end of lecture.
- **Take-home assignments**: Small assignments/projects to be completed outside of lecture. They may be individual effort or for small teams (possibly your studio project team), depending on the assignment. Typically they will be submitted through eCampus.
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- Lecture Grade ................................................. 20%
- Studio Grade ...................................................... 80%

A student’s grade for AREN 402 is a combination of grades from the lecture and studio portions of the course. The studio instructor will assign a baseline grade, which the lecture instructor will modify based on your performance in lecture.

**Lecture Grade**

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**Studio Grade**

A student’s studio grade will be based on his/her performance on the studio design project. It will be determined based on the documented guidelines given by the student’s studio instructor. However, all studio instructors will evaluate students with primary emphasis on the following factors:

- Quality of design concept
- Proper application of design methods and processes
- Level of individual participation
- Communication quality with instructor and sponsors (oral, written, technical)

**Conversion of numerical grade to letter grade will be made as follows:**

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<tbody>
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I. **SPECIAL PROVISIONS**

1. **Americans with Disabilities Act (ADA) Policy Statement**
   The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Disability Services, located in the Disability Services Building at White Creek on west campus or call 979-845-1637. For more information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

2. **Academic Integrity**
   Misconduct in research or scholarship includes fabrication, falsification, or plagiarism in proposing, performing, reviewing, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data. It is very important to read other people's work and to use their ideas in developing theses, professional papers, or otherwise completing academic requirements. This is called scholarship and is highly rewarded because it builds a cumulative body of knowledge. When other scholars share their ideas, they expect that others will give them credit when making use of their ideas. It is critically important for students to understand the rules for properly crediting other people's ideas when writing a thesis or professional paper or otherwise completing academic requirements.

   If you use someone else's idea without using his or her specific words, this is called paraphrasing. When you paraphrase, you are expected to indicate the source of the idea (the author and publication date, but not a page number). This allows a reader to find the source of the ideas, verify that you have accurately represented them, and obtain additional information about those ideas if necessary. If you use someone else's exact words, this is called quoting. When you quote, you are expected to enclose the words in quotation marks, and indicate the source of the quote (the author, publication date, and page number). Plagiarism also applies to information found on the web; it is equally important to cite a web source and the rules above pertain. Consequently, if there are not quotation marks around the text and no source is cited, instructors will assume that you intend for them to conclude that any ideas, especially the specific words, that you presented in your work are your own. Thus, if the idea or the exact words are taken from another source and you do not indicate the source of the idea, you are representing another person's ideas as if they were your own. This is called plagiarism and is a very serious offense.

   Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, is sufficient grounds to initiate an academic dishonesty case. For additional information please visit: [http://aggiehonor.tamu.edu/](http://aggiehonor.tamu.edu/).

   “*An Aggie does not lie, cheat, or steal, or tolerate those who do.*”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.
3. **Absences**

Rules concerning excused absences may be found at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). In particular, except for absences due to religious obligations, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. By state law, if a student misses class due to an obligation of his or her religion, the absence is excused. A list of days of religious obligation for the coming semester may be found at [http://student-rules.tamu.edu/append4](http://student-rules.tamu.edu/append4).

If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. If the instructor has a regularly scheduled make up exam, students are expected to attend unless they have a university approved excuse. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student Rule 7 for details [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code.

1) Participation in an activity that is required for a class and appears on the university authorized activity list at [https://stuactonline.tamu.edu/app/sponsauth/index](https://stuactonline.tamu.edu/app/sponsauth/index)

2) Death or major illness in a student’s immediate family.

3) Illness of a dependent family member.

4) Participation in legal proceedings or administrative procedures that require a student's presence.

5) Religious holy day. NOTE: Prior notification is NOT required.

6) Injury or illness that is too severe or contagious for the student to attend class.

   a) Injury or illness of three or more class days:
      Student will provide a medical confirmation note from his or her medical provider within one week of the last date of the absence (see Student Rules 7.1.6.1)

   b) Injury or illness of less than three class days:
      Student will provide one or both of these (at instructor’s discretion), within one week of the last date of the absence:
      (i.)[Texas A&M University Explanatory Statement for Absence from Class form available at http://attendance.tamu.edu](http://attendance.tamu.edu)
      (ii.) Confirmation of visit to a health care professional affirming date and time of visit.

   c) An absence for a non-acute medical service does not constitute an excused absence.

7) Required participation in military duties.

8) Mandatory admission interviews for professional or graduate school that cannot be rescheduled.

9) Mandatory participation as a student-athlete in NCAA-sanctioned competition.

10) In accordance with Title IX of the Educational Amendments of 1972, Texas A&M University shall treat pregnancy (childbirth, false pregnancy, termination of pregnancy and recovery therefrom) and related conditions as a justification for an excused absence for so long a period of time as is deemed medically necessary by the student’s physician. Requests for excused absence related to pregnancy should be directed to the instructor.
Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

4. **Disruptive Behavior**
If a student's behavior in class is sufficiently disruptive to warrant immediate action, the instructor is entitled to remove a student on an interim basis, pending an informal hearing with the Head of the Department offering the course. This hearing must take place within three working days of the student's removal. This rule and supporting information may be found at [http://student-rules.tamu.edu/rule21](http://student-rules.tamu.edu/rule21).

5. **Copyright**
Instructor reserves copyright to all materials used in this course. This means all materials generated for this class, which includes but is not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy any material, unless expressly granted written permission.

6. **Defacement of University Property**
"It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)". The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
# Course Change Request

## New Course Proposal

**Date Submitted:** 10/24/17 3:54 pm  

**Viewing:** ATMO 370: Student Experiences Abroad in Meteorology  

**Last edit:** 10/26/17 9:57 am  

Changes proposed by: korty

<table>
<thead>
<tr>
<th>Faculty Senate Number</th>
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<tbody>
<tr>
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</tbody>
</table>

**Contact(s)**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Korty</td>
<td><a href="mailto:korty@tamu.edu">korty@tamu.edu</a></td>
<td>9798479090</td>
</tr>
</tbody>
</table>

**Course prefix** | ATMO  

**Course number** | 370

**Department** | Atmospheric Sciences

**College/School** | Geosciences

**Academic Level** | Undergraduate

**Undergraduate course level justification (Select One)**  

**Prerequisites**

*All prerequisites will be enforced through COMPASS.*

**Effective term** | 2018-2019

**Complete Course Title** | Student Experiences Abroad in Meteorology

**Abbreviated Course Title** | EXPER ABROAD IN METEOROLOGY

**Catalog course description**

Observation, study and analysis of meteorological phenomena and processes in the regional settings in which they occur; study-abroad experiences.

**Prerequisites and Restrictions**

ATMO 201 or concurrent enrollment.

**Concurrent Enrollment** | No

**Should catalog prerequisites / concurrent enrollment be enforced?** | Yes

**Enforced Prerequisites / Concurrent Enrollment**

---

https://nextcatalog.tamu.edu/courseleaf/approve/
ATMO 370: Student Experiences Abroad in Meteorology

And/Or | Course Prefix/Number | Min Grade/Score | Academic Level | Concurrency?
--- | --- | --- | --- | ---
 | ATMO 201 | D | UG | Yes

Crosslistings: No

Stacked: No

Semester: 1-4
Credit Hour(s): 1-4
Contact Hour(s) (per week):
Lecture: 0
Lab: 0
Other: 1-4
Total: 1-4

Repeatable for credit? Yes
Number of times repeated for credit - OR - Maximum number of hours 9
When will this course be repeated? Within a student's career

Three-peat? Yes

CIP/Fund Code: 4002040400
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Independent Study

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) Yes

Learning Outcomes
Meets traditional face-to-face learning outcomes.

Describe how learning outcomes are met or provide justification why they are not met.
This course meets face-to-face in a country abroad, led by a Texas A&M faculty member. Learning outcomes are met through class instruction, projects, and evaluations in the same way as if it were held on main campus.

Hours
Meets traditional face-to-face hours.

Describe how hours are met or provide justification why they are not met.
The course is typically taught during Maymester, but meets for 15 hours of face-to-face instruction per credit offered. (The typical experience will meet for 45 hours of instruction and be offered for 3 credits, but the number may vary with country and year; credits offered are tied to instructional hours.)

Will this course be taught as a distance education course? No

Is 100% of this course going to be taught in Texas? No

Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

Required (select program)

Elective (select program)

Has/Will this course be(ren) submitted for Program(s)

(BS-METR) Meteorology - BS

No
core curriculum consideration?

Has/will this course be submitted for Writing or Communication consideration?  No

Has/will this course be submitted for ICD consideration?  No

Course Syllabus

Syllabus: Upload syllabus
Upload syllabus: atmo370syllabus.pdf

Letters of support or other documentation  No

Additional information

Reviewer Comments
Sandra Williams (sandra-williams) (10/26/17 9:59 am): Can the title be changed to simply “Experiences Abroad in Meteorology”?
Robert Korty (korty) (11/07/17 3:07 pm): The study abroad experience is promoted and known by the acronym SEA-Met, so we wish to keep “Student” in the title.
Sandra Williams (sandra-williams) (12/04/17 3:54 pm): UCC approved in December.

Reported to state?  Add
Course title and number: ATMO 370 – Student Experiences Abroad in Meteorology

Term: Summer 2018

Meetings for this section will be held daily on the campus of the Caribbean Institute of Meteorology and Hydrology, Bridgetown, Barbados during the Maymester (May 15-30); instructional meetings MTWRF beginning at 9:00 a.m. AST with activities continuing until approximately 3:00 p.m. AST each day; see class schedule for specific details

Course Description and Prerequisites

Prerequisite: ATMO 201

Catalog description: Observation, study, and analysis of meteorological phenomena and processes in the regional settings in which they occur; study-abroad experiences.

Additional description: This course is a part of the Student Experiences Abroad in Meteorology (SEA-Met) program, designed to give students an opportunity to learn about meteorological processes affecting a region in the setting in which they are occurring, with emphasis on how these processes differ from in North America and/or the middle latitudes. This section will focus on phenomena affecting the Caribbean Sea, with special attention to issues affecting analyses at near-equatorial and low latitudes as well as heating and flow around small islands. Though the course is listed in the catalog under variable credit, each year a section is offered with a defined number of credits determined by the number of hours of instruction included in the trip. The study abroad portion of this year’s program will be offered for either 3 or 4 credit hours, with 3 credits for the successful completion of the in-country experience. The option for the additional fourth credit hour requires additional analysis and work after the in-country experience concludes; for 4 credit hours, an instructor-approved data analysis project culminating in a 5 page paper (single spaced, not including figures, AMS or other approved format will be required.

Learning Outcomes or Course Objectives

• Describe the major meteorological processes affecting weather and climate in the region. (For Barbados: describe the typical regimes affecting a tropical island location, and describe their dependence on island topography and elevation.)
• Identify the major meteorological phenomena and methods for their analysis (For Barbados: identify types of easterly waves and how they are assessed with satellite and wind analyses.)
• Describe the precipitation characteristics of these phenomena and their underlying thermodynamic and dynamic principles.
• Set up and operate emergency communications capable of receiving weather information without internet capability (e.g., Ham Radio, HF meteorological facsimile, and/or NAVTEX).
• Compare and contrast operational meteorological structure, tools, and data of the destination country with those of the U.S. National Weather Service.
• Compare and contrast meteorological processes in the destination region with those occurring in North America.
• Describe the sustainability issues faced by the region visited.
• Demonstrate social, cultural, and global competence by living and working effectively in a different society and recognize the diverse economic, political, cultural, and religious practices and opinions of region of host country.
• Prepare and deliver oral and poster presentations on the experience to include both scientific and cultural content.
Instructor Information

Name: Robert Korty
Telephone number: 979-847-9090
Email address: korty@tamu.edu
Office hours: Office hours: Thursdays 2:00-4:00 or by appointment.
Office location: O&M 1009 B

Textbook and/or Resource Material

COMET© modules available at www.meted.ucar.edu as assigned. No formal text will be used.

Grading Policies

This course and experience is a tremendous opportunity for participants, and includes considerable cost-sharing beyond your tuition and fees. It is expected that you will participate fully in ALL activities, including pre-and post trip sessions. Grading for the 3-credit section will be based on full participation (10%), periodic quizzes (30%), and quality and timely completion of daily assigned written reflections and presentations (60%). If taking the 4-credit option, 75% of the total course grade will be determined in the same manner as described previously, with the remaining 25% of the total course grade determined from the final term paper. Grading will be on a standard 10-point scale (A-F):
A: 90-100%
B: 80-89%
C: 70-79%
D: 60-69%
F: <60%

Attendance and Make-up Policies

Students are required to fully and actively participate in every class meeting, and a grade of zero will be assigned for all assignments missed for unexcused absences; a grade of zero will be assigned for the participation part of the course grade for any student with an unexcused absence. No make-up for work missed for unexcused absences will be allowed. Excused absences (e.g., for severe or contagious illness) will follow the procedures and definitions of Student Rule 7 (http://student-rules.tamu.edu/rule07), and a schedule for turning in missed work for excused absences will be determined by arrangement with the instructor.

Course Topics, Calendar of Activities, Major Assignment Dates

Daily readings will be assigned from packets handed out and COMET modules appropriate to the topics discussed. Quizzes (Q) will be given on Thursday, May 17; Tuesday, May 22; and Friday, May 25. Student presentations (P) will begin on the second day of classes and continue at the start of each day thereafter. Daily writing reflections must be completed each night and are due at the start of classes the following day.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading and assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (M 5/14: 3 hours)</td>
<td>Introduction to Caribbean Institute of Meteorology and Hydrology and Introduction to Tropical Meteorology</td>
<td>Comet module and handout packet</td>
</tr>
<tr>
<td>1 (T 5/15: 6 hours)</td>
<td>Morning weather briefing; Easterly waves; Tropical Cyclones and Hurricanes; Tropical Streamline Analyses</td>
<td>P; Comet module and handout packet</td>
</tr>
<tr>
<td>Date</td>
<td>Hours</td>
<td>Topics</td>
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</tr>
<tr>
<td>W 5/16:</td>
<td>3 hours</td>
<td>Weather briefing; Island meteorology and microclimate; Sea breeze dynamics</td>
</tr>
<tr>
<td>R 5/17:</td>
<td>6 hours</td>
<td>Weather briefing; wind grids analysis; modeling and sea breeze study</td>
</tr>
<tr>
<td>F 5/18:</td>
<td>6 hours</td>
<td>Weather briefing; sea breezes and meteorological instrumentation</td>
</tr>
<tr>
<td>M 5/21:</td>
<td>6 hours</td>
<td>Weather briefing; hydrology, water, and energy challenges in the Caribbean</td>
</tr>
<tr>
<td>T 5/22:</td>
<td>3 hours</td>
<td>Weather briefing; air quality, aerosol, and Saharan dust layer; aerosol field measurements</td>
</tr>
<tr>
<td>W 5/23:</td>
<td>4.5 hours</td>
<td>Weather briefing; Climate change in the Caribbean; tour of Barbados Weather Service</td>
</tr>
<tr>
<td>R 5/24:</td>
<td>3 hours</td>
<td>Weather briefing; Caribbean history and culture; operational forecasting issues in the tropics</td>
</tr>
<tr>
<td>F 5/25:</td>
<td>4.5 hours</td>
<td>Weather briefing; Caribbean low-level jet and other advanced topics</td>
</tr>
</tbody>
</table>

For students completing the additional credit: complete weekly meetings on Fridays at 2:00 with instructor (1009 B O&M building) during remainder of Summer I session on data analysis projects and writing workshop. Final term project due last day of Summer I classes (F 6/29).

**Other Pertinent Course Information**

Students must have a valid passport available 10 weeks prior to departure. This will enable travel documents to be obtained and reservations booked without becoming a distraction for the traveling cohort. Initial interest meetings will be held beginning approximately 6 months before the trip to answer questions about the experience and discuss logistics that must be coordinated prior to the course.

**Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Academic Integrity**

For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
Course Change Request

New Course Proposal

Date Submitted: 11/16/17 3:04 pm

Viewing: BIOL 492 : Biomedical Therapeutics Development

Last edit: 12/05/17 1:39 pm

Changes proposed by: ljean

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
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<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lieu Jean</td>
<td><a href="mailto:ljean@bio.tamu.edu">ljean@bio.tamu.edu</a></td>
<td>979-862-4093</td>
</tr>
</tbody>
</table>

Course prefix       BIOL       
Department           Biology       
College/School       Science       
Academic Level       Undergraduate    
Undergraduate course level justification (Select One)
College/Program Course Level Rubric

Academic Level       Graduate       
(alternate)   
Effective term       2018-2019       

Complete Course Title
Biomedical Therapeutics Development

Abbreviated Course Title
BIOMEDICAL THERAPEUTICS DEVL

Catalog course description
Basic aspects of the biotechnology business; includes key aspects of biotechnology patents, the main steps in preclinical drug development and company structure and funding.

Prerequisites and Restrictions
BIOL 213 or equivalent; CHEM 227 and CHEM 228.

Concurrent Enrollment
No

Should catalog prerequisites / concurrent enrollment be enforced?
Yes

Enforced Prerequisites / Concurrent Enrollment

And/Or   |   Course Prefix/Number   | Min Grade/Score | Academic Level |   ) | Concurrency?

In Workflow
1. BIOL Department Head
2. Curricular Services Review
3. SC Committee Preparer UG
4. SC Committee Chair UG
5. SC College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 11/16/17 3:37 pm
Thomas McKnight (tdmcknight): Approved for BIOL Department Head
2. 11/17/17 8:31 am
Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 11/17/17 9:25 am
Sara Thippin (saratthippin): Approved for SC Committee Preparer UG
4. 11/17/17 10:02 am
Lucas Macri (lmacri): Approved for SC Committee Chair UG
5. 11/17/17 10:03 am
Lucas Macri (lmacri): Approved for SC College Dean UG
6. 11/17/17 11:13 am
Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/05/17 1:40 pm
Sandra Williams (sandra-williams): Approved for UCC Chair
Learning Outcomes

Meets traditional face-to-face learning outcomes.

Describe how learning outcomes are met or provide justification why they are not met.

Learning outcomes are met because students meet for a total of 15 hours during the 10-week course, which equates to the same amount of hours that a 14-week course would traditionally meet for a 1 hour, 1 credit course.

Hours

Meets traditional face-to-face hours.

Describe how hours are met or provide justification why they are not met.

Classes are 1.5 hours each, equaling a total of 15 hours of class. Fourteen hours is standard for a 1 credit course during a semester.

Will this course be taught as a distance education course?

No

Is 100% of this course going to be taught in Texas?

Yes

Will classroom space be needed for this course?

Yes

This will be a required course or an elective course for the following programs:

Required (select program)

Elective (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-BIOL) Biology - BS</td>
</tr>
</tbody>
</table>

Has/will this course be (en) submitted for core curriculum consideration?

No
Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No

---

**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus: [BIOI492-Introduction to Biomedical Therapeutics Development.doc](https://nextcatalog.tamu.edu/courseleaf/approve/#)

Letters of support or other documentation: No

Additional information: The link to student rule 7 has been added to the syllabus.

Reviewer Comments:

- **Sandra Williams (sandra-williams) (09/28/17 4:08 pm):** Edits made to the enforced prerequisite table to comply with the catalog prerequisites.
- **Sandra Williams (sandra-williams) (09/28/17 4:11 pm):** Rollback: Syllabus is missing link to student rule 7.
- **Sandra Williams (sandra-williams) (10/02/17 3:44 pm):** Update received. Moving forward, however, unclear as to the number of weeks on syllabus.
- **Bob Knight (bob-knight) (10/27/17 11:43 am):** Introduction in title of 400 level course
- **Bob Knight (bob-knight) (10/27/17 11:45 am):** Lacking 14 weeks in syllabus course outline
- **Jim Herman (jherman) (10/31/17 3:23 pm):** 200-level prereqs do not support this as a 400-level course according to the college’s rubric.
- **Sandra Williams (sandra-williams) (11/13/17 10:12 am):** Update made to remove "Introduction" from title.
- **Sandra Williams (sandra-williams) (11/16/17 9:27 am):** Rollback: if this course will be taught as a non-traditional course, please answer the question(s) on the form.
- **Sara Thigpin (saratigpin) (11/16/17 2:31 pm):** Rollback: non-traditional box needs to be marked yes.
- **Bob Knight (bob-knight) (11/29/17 3:55 pm):** Still has introduction in title on syllabus.
- **Sandra Williams (sandra-williams) (12/05/17 1:40 pm):** Update received. UCC approved in December.

Reported to state? Add

Key: 18175
BIOL 492: Biomedical Therapeutics Development

Term: Spring 2018
Meeting Times: Tuesdays Noon – 1:30
Location: ILSB room 3147
Number of Credits: 1

Course description
This class provides instruction on the basic aspects of the biotechnology business. Topics include key aspects of biotechnology patents, the main steps in preclinical drug development, and company structure and funding.

Course Prerequisites (you MUST meet these pre-requisites)
BIOL351, VTPB405, GENE302, or BICH410 or Instructor Approval.

Useful but not necessary prerequisites
Previous or concurrent enrollment in BIOL 489-501: Ethics in Biological Research

Learning outcomes/ learning objectives
At the end of this course, students will be able to:
- Define the basic terminology of the biotechnology business;
- Evaluate patents;
- Discuss risks involved in biotechnology;
- Explain basic scientific and regulatory steps involved of drug development;
- List several ways to finance a project;
- Evaluate a new biotechnology project

Instructors
Name: Dr. Richard Gomer
Telephone Number: 979 458 5745
email address: rgomer@tamu.edu
Affiliation: TAMU Biology
Office hours: By appointment
Office location: ILSB room 2121
301 Old Main Drive        MS 3474
College Station, TX 77843-3474 USA

Name: Dr. Thomas Meek
Telephone Number: 979-458-9787
email address: tdmeek@tamu.edu
Affiliation: TAMU Biochemistry and Biophysics
Office hours: By appointment
Office location: ILSB room 2126
301 Old Main Drive        MS 3474
College Station, TX 77843-3474 USA

Name: Dr. James Smith
Telephone Number: 979-845-2417
email address: jsmith@bio.tamu.edu
Affiliation: TAMU Biology
Office hours: By appointment
Office location: Biological Sciences Building East 314D
Butler Hall 100        MS 3258
College Station, TX 77843-3258 USA
Grading policy
Students will be evaluated on the basis of five exercises, each worth 100 points, and class participation, worth 100 points.
A = 540 to 600 points (≥90%)
B = 480 to 539 points (≥80%)
C = 420 to 479 points (≥70%)
D = 360 to 419 points (≥60%)
F = 359 or fewer points (<60%)
Grades will not be curved.

Late grading policy:
Late assignments will not be accepted without a valid excuse as defined by the University rules. The student is responsible for providing satisfactory evidence within one week of the end of the absence to document the necessity of the absence and arrange a time to complete the assignment (see Student Rule 7: http://student-rules.tamu.edu/rule07).

Course topics, calendar of activities, major assignment dates
Before class, read the indicated reading

Jan 24 1) Introduction (Gomer)
Reading:

Medical, veterinary, and agricultural technologies; biofuels
Market analysis/ Due diligence/ competition
Ease to market decisions, risk
GRAS compounds
OTC vs prescription vs medical device
Platform, Space, Key opinion leaders
Medicare reimbursement schedule

Jan 31 2) Intellectual property I (Gomer)
Reading:
1) http://www.uspto.gov/web/offices/pac/mpep/s2173.html

Trade Secret vs Patent
Claim construction
Indefiniteness
Inherency
Markman hearing
Patent searches
Bad patents
Off patent/ Generics

Feb 7 No class

Feb 14 3) Intellectual Property II (Gomer)
Reading:
1) http://law.justia.com/cases/federal/appellate-courts/F3/358/916/478026/
2) http://www.supremecourt.gov/opinions/12pdf/12-398_1b7d.pdf

NDAs
Rochester ruling
Supreme Court AMP v Myriad ruling
Finding patent attorney
Other key rulings, PTAB, Court of appeals, inter partes review
**Exercise:** patent search

**Feb 21** 4) Preclinical work I (Meek)
**Reading:**
2) Drug Development Process (handout)

Drug Discovery and Development: Idea => Target => Lead => Candidate => Clinic
Drug Discovery: Early Phase: Target Discovery & Validation
   - Biologics vs. small molecules vs. natural products – failure rates
Drug Discovery: Middle Phase: Lead Discovery, Optimization, Progression to Drug Candidate
   - Lipinski’s rule of 5 and exceptions
   - Basic medicinal chemistry
   - Hit to lead candidate (lead optimization)
   - Potency & Selectivity
Drug Discovery: Late Phase: Safety, Toxicology, proof of concept in disease model

**Feb 28** 5) Preclinical work II (Meek)
**Reading:**
1) [http://www.fda.gov/ForPatients/Approvals/Drugs/ucm405658](http://www.fda.gov/ForPatients/Approvals/Drugs/ucm405658)

Drug Development: Preclinical path
ADME
Pharmacokinetics & Pharmodynamics
Formulation, Bioavailability, Delivery
First Time in Humans
IND
Phase 1, 2, 3
GMP
GLP
CRO’s
Regulatory hurdles
FDA paperwork

**March 7** 6) Clinical trials (Meek and Gomer)
**Reading:**
1) [http://www.fda.gov/ForPatients/Approvals/Drugs/ucm405622.htm](http://www.fda.gov/ForPatients/Approvals/Drugs/ucm405622.htm)

Safety monitoring board
Trial statistics
Need for biomarkers and/or diagnostics
Clinicaltrials.gov
Examples of failures:
   - Dose too high
   - Trial failing the drug
   - TGN1412 debacle

**March 14** – spring break

**March 21** 7) Company structure and funding I (Smith)
**Reading:** Business Plan Overview
1) [https://www.entrepreneur.com/article/247574](https://www.entrepreneur.com/article/247574)
2) [https://www.entrepreneur.com/article/38290](https://www.entrepreneur.com/article/38290)
   - Elevator Pitch Overview
3) [https://www.entrepreneur.com/article/58946](https://www.entrepreneur.com/article/58946)
   - Online Company Profiles
Exercise: write a white paper
Exercise: evaluation of business plan
Exercise: Evaluate Elevator Pitches

March 28

8) Company structure and funding II (Smith)

Reading:
1) What Researchers Who Want To Be Entrepreneurs Need To Know, Chemical Engineering News, Volume 90 Issue 34 | pp. 36-39 | Profile Issue Date: August 20, 2012
   http://cen.acs.org/articles/90/i34/Researchers-Want-Entrepreneurs-Need-Know.html

2) Helping Scientists Commercialize Inventions, Chemical Engineering News, Volume 90 Issue 34 | p. 39 | Profile Issue Date: August 20, 2012
   http://cen.acs.org/articles/90/i34/Helping-Scientists-Commercialize-Inventions.html


   Non-dilutive Financing
   Angel investors
   Venture capital
   Big pharma
   Typical deal structure
   Milestones and go/ no-go decisions
   Gantt chart

Exercise: Prepare a Gantt chart

April 4

9) Case studies in Biomedical Therapeutics Development (Gomer, Meek, Smith)

April 11

10) Case studies in Biomedical Therapeutics Development (Gomer, Meek, Smith)

Reading:

2) Nexium case study: Focusing a launch strategy on switching existing prescriptions, Datamonitor, Reference Code: BPCS22, Publication Date: 03/04. (handout)


   EPO
   Promedior
   SANO
   Gilead
Presentation and critiques of selected elevator pitches

**Americans with Disabilities Act (ADA) Policy Statement**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek Complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Academic Integrity Statements**
AGGIE HONOR CODE: “An Aggie does not lie, cheat, or steal or tolerate those who do.” Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: [http://aggiehonor.tamu.edu/](http://aggiehonor.tamu.edu/)

**Copyright Policy**
All materials used in this class are copyrighted. Therefore, you do not have the right to copy class materials unless permission is expressly granted.
**Course Change Request**

**New Course Proposal**

Date Submitted: 11/15/17 10:26 am

Viewing: **COMM 476 : Advanced Social Media**

Last edit: 11/17/17 8:22 am

Changes proposed by: n-street

<table>
<thead>
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<th>Programs referencing this course</th>
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<tbody>
<tr>
<td>CERT-SMDI: Social Media - Certificate</td>
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*Faculty Senate Number*

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<tr>
<td></td>
<td>Nancy Street</td>
<td><a href="mailto:n-street@tamu.edu">n-street@tamu.edu</a></td>
<td>979-862-6968</td>
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**Course prefix** COMM  
**Course number** 476

**Department** Communication  
**College/School** Liberal Arts  
**Academic Level** Undergraduate  
**Undergraduate course level justification (Select One)**  
**Prerequisites**

*All prerequisites will be enforced through COMPASS.*

**Effective term** 2018-2019  
**Complete Course Title** Advanced Social Media  
**Abbreviated Course Title** ADVANCED SOCIAL MEDIA

**Catalog course description**  
Analysis of social media platforms and social media accounts used by organizations and individuals in professional contexts; production of individual posts for various purposes and goals; production of photos, videos and graphics for social sharing.

**Prerequisites and Restrictions**  
Grade of B or better in COMM 275; junior or senior classification.

**Concurrent Enrollment** No  
**Should catalog prerequisites / concurrent enrollment be enforced?** Yes

**Enforced Prerequisites / Concurrent Enrollment**

1. 11/15/17 12:24 pm  
Kevin Barge (kbarge): Approved for COMM Department Head

2. 11/17/17 8:24 am  
Sandra Williams (sandra-williams): Approved for Curricular Services Review

3. 11/17/17 8:37 am  
Penny Boice (pboice): Approved for LA Committee Preparer UG

4. 11/20/17 2:35 pm  
Steve Oberhelman (s-oberhelman): Approved for LA Committee Chair UG

5. 11/20/17 8:07 pm  
Steve Oberhelman (s-oberhelman): Approved for LA College Dean UG

6. 11/21/17 9:14 am  
Sandra Williams (sandra-williams): Approved for UCC Preparer

7. 12/04/17 3:55 pm  
Sandra Williams (sandra-williams): Approved for UCC Chair

[https://nextcatalog.tamu.edu/courseleaf/approve/](https://nextcatalog.tamu.edu/courseleaf/approve/)
### Course Information

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- **Crosslistings**: No  
  Crosslisted With
- **Stacked**: No  
  Stacked with

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<th>Lab: 0</th>
<th>Other: 0</th>
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- **Repeatable for credit?**: No
- **Three-peat?**: No
- **CIP/Fund Code**: 0901000001
- **Default Grade Mode**: Letter Grade (G)
- **Alternate Grade Modes**: Satisfactory/Unsatisfactory

- **Method of instruction**: Lecture
- **Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)**: No
- **Will this course be taught as a distance education course?**: No
- **Is 100% of this course going to be taught in Texas?**: Yes
- **Will classroom space be needed for this course?**: Yes

This will be a required course or an elective course for the following programs:

**Required (select program)**

**Elective (select program)**

<table>
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<td>(BA-COMM) Communication - BA</td>
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<tr>
<td>(BA-TCMS) Telecommunication Media Studies - BA</td>
</tr>
<tr>
<td>(BS-TCMS) Telecommunication Media Studies - BS</td>
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- **Has/will this course be(e)n submitted for core curriculum consideration?**: No
- **Has/will this course be(e)n submitted for Writing or Communication consideration?**: No

https://nextcatalog.tamu.edu/courseleaf/approve/#
## Course Syllabus

<table>
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<th>Letters of support or other documentation</th>
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### Additional Information

**Reviewer Comments**

- **Sandra Williams (sandra-williams) (11/17/17 8:24 am):** Edits made to the enforced prerequisite table to comply with the catalog prerequisites and course level justification.
- **Sandra Williams (sandra-williams) (12/04/17 3:55 pm):** UCC approved in December.

**Reported to state?**

- Add
Syllabus for: **Advanced Social Media**

Instructor: TBA  
Email: XXX@tamu.edu  
Phone: We do not have telephones in our offices.  
Please use email for contact

**Office:** BLTN XXX  
**Office hours:** XXX XXX

**COURSE DESCRIPTION:** Analysis of social media platforms and social media accounts used by organizations and individuals in professional contexts; production of individual posts for various purposes and goals; production of photos, videos and graphics for social sharing. Juniors or Seniors only

**PREREQUISITES:**  B or better in COMM 275;

**STUDENT LEARNING OUTCOMES.** The successful student will:

1. Analyze social media use by organizations and other professionals  
2. Create and critique social media posts  
3. Create written content, photos, videos and graphics for use in social media posts  
4. Solve problems using social media analytics

**REQUIRED TEXTBOOK AND ECAMPUS**

Ecampus for COMM 476  
Social media accounts  

During this course, students are required to use various social media platforms. Several graded assignments will require the use of accounts using your real name and publicly viewable posts. It is acceptable to have more than one account on one platform (such as Twitter) if the student prefers it. However, it is not acceptable to make accounts private or hidden if they are being used for a course assignment. The student’s real name must be on the account.

**ASSIGNMENTS**

**Reading** assignments designated by Chap and/or page number. References to “Ecampus” refer to information posted on Ecampus.tamu.edu for COMM 476.

**Quizzes** are online, open-book and will survey your understanding (and keeping up with) the reading. Quizzes are never rescheduled without documentation of a “University excused absence” presented within the time frame specified in the Student Rules. Please see [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07).

**Digital Portfolio:** You will create (or update) a digital portfolio that features artifacts of what you’ve learned this semester.

**Digital Projects:** The grades from the following projects will be averaged to comprise the digital projects grade: Personal social media inventory; Twitter sources; Facebook: Analysis of a media account; Instagram/Snapchat assignment; Curation/aggregation assignment; Interview with a social media manager, engagement editor, or similar; Live video assignment; Social graphic assignment; Live-tweeting assignment

**Final Presentation:** Presentations will involve a 10-minute demonstration in class, showing how news organizations are using a particular app/social media platform from a list to be provided by the instructor.

**Social Media Journal:** you will make at least one post per week in a public, online, individual journal at Tumblr. Tumblr will be used because you can add Google Analytics without an extra charge. See Ecampus for additional details.
**GRADES AND GRADING.** Grades for COMM 476 will be weighted accordingly:

- **Quiz average:** 10%
- **Digital portfolio:** 10%
- **Digital projects average:** 50%
- **Final presentation:** 20%
- **Social Media Journal:** 10%

**Final Course Grade:**

- **A** = 89.5 - 100
- **B** = 79.5 - 89.49
- **C** = 69.5 - 79.49
- **D** = 59.5 - 69.49
- **F** = 0 - 59.49

**Policies**

I. **Attendance is required at each class meeting.** Please come to class each and every class period. Make-up work is NOT available for anyone without satisfactory documentation of a University excused absence. [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07) Also, please note that I do NOT accept the Texas A&M University Explanatory Statement for Absence from Class form.

Late work is accepted for 50% credit for the first week after the due date and then for 0 credit after the first week after the due date.

II. **Due dates and Final Draft Form.** All written assignments are due as specified in the calendar and are required to be in Final Draft Form. Late assignments will be accepted for up to (but no more than) 50% credit. Final Draft Form is defined as typed, double-spaced, free from typographical and grammatical errors, and with college level composition and style. Written assignments will be submitted using the assignments tab in Ecampus.

**Statements**

- **Americans with Disabilities Act (ADA) Policy Statement**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

- **Academic Integrity Statement and Policy**
  “An Aggie does not lie, cheat or steal, or tolerate those who do.” For additional information, please visit [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

  Please do not cheat, plagiarize or commit any act of academic dishonesty. If you do, you compromise your integrity and that of all Aggies and of each of your associates. We will recommend an F* in this course for anyone convicted of scholastic dishonesty.

- **Title IX Duty to Report**
  As a result of Title IX rulings, and as an employee of the State of Texas, I have a duty to report anything you tell me about sexual abuse or sexual violence, even if you ask me not to tell anyone. Therefore, if you disclose anything of this nature to me, I’ll know that you want me to report it. If you would like to talk to someone who does not have to report your disclosure to the university authorities, please talk with campus mental-health counselors, pastoral counselors, social workers, psychologists, health center employees, or any other person with a professional license requiring confidentiality.

- **Copyright Statement**
  All materials produced for this course are protected by federal copyright law. These materials can include, but are not limited to, this syllabus, class handouts, course notes, PowerPoint slides, slides or information printed on paper or provided virtually using any or all other software, course packets, and content on eCampus. You may not sell, lend, make publicly available, or copy these materials. Distribution of these materials in any way, including digital versions of documents and information, may constitute a violation of copyright law, the Texas A&M University Student Code of Conduct as described in Student Rule 24, and/or the Aggie Honor Code as described in Student Rule 20.
This calendar will change in order to take advantage of speakers who may become available. We reserve the right to make adjustments. All adjustments will be announced via email and via Ecampus. As always, check TAMU email and Ecampus at least twice a day. Thanks!!

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<th>DATE</th>
<th>Topics</th>
<th>Read/Do this week</th>
<th>Notes and Due Dates</th>
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<tbody>
<tr>
<td>WEEK 1</td>
<td>Introduction to the course; expectations</td>
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<tr>
<td>WEEK 2</td>
<td>Listening to the audience; social media ecosystem</td>
<td>Chap 1 Ecampus articles</td>
<td>Your social media profile: Inventory assignment (in class) Your social media journal (starts now)</td>
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<td>WEEK 3</td>
<td>Using social platforms to reach targeted audiences</td>
<td>Chap 2 Ecampus articles</td>
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<td>Quiz 2</td>
<td>Social Media Journal post due</td>
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<td>WEEK 4</td>
<td>The consumer; consequences of the Facebook algorithm</td>
<td>Chap 3 Ecampus articles</td>
<td>Digital Media Assignment I due</td>
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<td>Facebook and news; Instant Articles; Pages; Groups</td>
<td>Quiz 3</td>
<td>Digital Media Assignment 2 given</td>
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<td>Social Media Journal post due</td>
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<td>WEEK 5</td>
<td>Spreading your message</td>
<td>Chap 4 Ecampus articles</td>
<td>Digital Media Assignment 2 due</td>
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<td>Scheduling posts—why and how</td>
<td>Quiz 4</td>
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<td>Social Media Journal post due</td>
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<td>Engagement: Building communities; responding to people; comment sections</td>
<td>Chap 5 Ecampus articles</td>
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<td>Audience metrics and analysis</td>
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<td>WEEK 7</td>
<td>Tone and language in responses</td>
<td>Chap 6 Ecampus articles</td>
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<td>Viral media and sharing behaviors</td>
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<td>Final Presentation Group Assignment given</td>
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<td>WEEK 8</td>
<td>Authenticity, transparency Short social videos; live streaming videos; Facebook Live and news events</td>
<td>Chap 8 &amp; 9 Ecampus articles Quiz 7</td>
<td>Digital Media Assignment 5 due Digital Media Assignment 6 given Social Media Journal post due</td>
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<td>Asking questions (relates to engagement and community) Crowdsourcing and UGC Live coverage of events, breaking news</td>
<td>Chap 14 Ecampus articles Quiz 8</td>
<td>Digital Media Assignment 6 due Digital Media Assignment 7 given Social Media Journal post due</td>
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<td>WEEK 10</td>
<td>Providing value; free vs. paid Curation and aggregation: Best practices</td>
<td>Chap 10 Ecampus articles Quiz 9</td>
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<td>WEEK 11</td>
<td>Social network ads, Images, “cards” and animated GIFs: Creating attention with visuals</td>
<td>Chap 11 Ecampus Article Quiz 10</td>
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<td>Preparing for mistakes; reactions and corrections, Verification and fact checking with social media; “fake news”</td>
<td>Chap 15 Ecampus Articles Quiz 11</td>
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<td>Data protection, security and privacy Happy Thanksgiving!!</td>
<td>Chap 16 &amp; 17 Ecampus Articles Quiz 12</td>
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<td>WEEK 14</td>
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Syllabus Adapted from JOU 4930 UFL, By Mindy McAdams

*There is no Final Exam in this course*
New Course Proposal

Date Submitted: 11/02/17 9:01 am

Viewing: CSCE 412 : Cloud Computing

Last edit: 11/12/17 9:51 pm
Changes proposed by: smilingsheila

Faculty Senate Number

Contact(s)

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<th>Name</th>
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<tr>
<td>Sheila Dotson</td>
<td><a href="mailto:dotson@tamu.edu">dotson@tamu.edu</a></td>
<td>979-845-6176</td>
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Course prefix: CSCE  
Course number: 412

Department: Computer Science & Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level (alternate): Graduate
Effective term: 2018-2019

Complete Course Title: Cloud Computing
Abbreviated Course Title: CLOUD COMPUTING

Catalog course description:
Operating system and distributed systems fields that form the basis of cloud computing such as virtualization, key-value storage solutions, group membership, failure detection, peer to peer systems, datacenter networking, resource management and scalability; popular frameworks such as MapReduce and HDFS and cases studies on failure determination.

Prerequisites and Restrictions
Grade of C or better in CSCE 315.

Concurrent Enrollment: No
Should catalog prerequisites / concurrent enrollment be enforced? Yes

Enforced Prerequisites / Concurrent Enrollment

In Workflow
1. CSCE Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 11/03/17 12:09 pm
   Scott Schaefer (schaefer): Approved for CSCE Department Head
2. 11/12/17 9:53 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 11/17/17 2:37 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 11/17/17 3:51 pm
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 11/17/17 4:02 pm
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/19/17 9:46 am
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:55 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Crosslistings: No  
Stacked: No

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Repeatable for credit: No  
Three-peat: No

CIP/Fund Code: 1105010006  
Default Grade Mode: Letter Grade (G)  
Alternate Grade Modes: Satisfactory/Unsatisfactory

Method of instruction: Lecture  
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): Yes

Learning Outcomes:

Meets traditional face-to-face learning outcomes.

Describe how learning outcomes are met or provide justification why they are not met.

The learning outcomes for the distance/web-based course are equivalent to the face-to-face instruction in a regular semester because the material being covered in the distance/web-based version is identical to that in the face-to-face version of the course. In addition, the instructors that developed the face-to-face version of Cloud Computing and Mobile Computing are the instructors teaching the distance/web-based version.

Hours:

Meets traditional face-to-face hours.

Describe how hours are met or provide justification why they are not met.

The credit hour requirements are the same between the distance/web-based versions of the course because the assignments/projects/tests are identical to the face-to-face version of the class. The only difference is that the lectures are viewed online in the distance/web-based class instead of in person in the face-to-face version.

Will this course be taught as a distance education course?

Yes

I verify that I have reviewed the FAQ for Export Control Basics for Distance Education.

Yes

Is 100% of this course going to be taught in Texas?

Yes

Will classroom space be needed for this course?

Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-CPSC) Computer Science - BS</td>
</tr>
</tbody>
</table>

https://nextcatalog.tamu.edu/courseleaf/approve/
<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-CECN) Computer Engineering - BS, Computer Science Track</td>
</tr>
<tr>
<td>(BS-CEEN) Computer Engineering - BS, Electrical Engineering Track</td>
</tr>
</tbody>
</table>

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No

---

## Course Syllabus

**Syllabus:**
Upload syllabus

**Upload syllabus**
CSCE412-cloud-computing.pdf

**Letters of support or other documentation**
No

**Additional information**
Taught as special topics course Summer '17 and Fall '17, and to be offered Spring '18 again as special topics.

**Reviewer Comments**
- **Sandra Williams (sandra-williams)** *(10/30/17 3:33 pm)*: Edits made to catalog course description to conform to style guide. Edits made to catalog prerequisites to comply with enforced prerequisite table.
- **Sandra Williams (sandra-williams)** *(10/30/17 3:35 pm)*: Rollback: Syllabus has old Aggie Honor Code website link; also, Policy on Late Submissions may contradict student rule 7.
- **Sandra Williams (sandra-williams)** *(10/31/17 7:19 pm)*: Rollback: This syllabus shows "CSCE 689" which is a graduate special topics course; prereqs do not match form; old Aggie Honor code website link.
- **Sandra Williams (sandra-williams)** *(11/12/17 9:53 pm)*: Update received. Moving forward, however, two syllabi may be required (one for traditional and one for non-traditional format delivery).
- **Sandra Williams (sandra-williams)** *(12/04/17 3:55 pm)*: UCC approved in December.

**Reported to state?**
Add

---

Key: 18319
CSCE 412: Cloud Computing

Instructors:
- Dr. Dilma Da Silva
  Office: HRBB 305B
  email: dilma@cse.tamu.edu
  Office Hours: TBD
- Dr. Mahima Agumbe Suresh
  Office: 211
  email: agumbe@cse.tamu.edu
  Office Hours: TBD

Description:
This course introduces students to the fundamental concepts and technologies in cloud computing. Students gain an understanding of the system software stack that underpin the cloud offerings available in industry today. They also learn about the main open challenges in the field and current approaches pursued by the research community to address these problems. Our objective is to enable students to develop the knowledge and skills needed to deploy applications on cloud computing platforms while having an in-depth understanding of the efficiency, availability, and security trade-offs of adopting cloud-based solutions.

The course will cover topics from the operating system and distributed systems fields that form the basis of cloud computing such as virtualization, key-value storage solutions, group membership, failure detection, peer to peer systems, datacenter networking, resource management, and scalability. Popular frameworks such as MapReduce and HDFS and cases studies on failure determination are also covered.

Learning Outcomes:
At the conclusion of this course, students should be able to:
- demonstrate knowledge of the basic technology components that enable offerings such as Amazon AWS, Microsoft Azure, and OpenStack;
- analyze cloud configuration offerings and assess fitness for specific application domains;
- configure software stacks for cloud deployment and automate develop-deploy cycles;
- identify weaknesses and strengths of cloud offering configurations;
- characterize expected performance, availability, and reliability of common multi-tier application when deployed on cloud platforms,

Prerequisites:
CSCE 315 with grade of C or better

Grading Policy:
The cumulative numerical grades from graded assignments are normalized to 100 points and curved. A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 59-0.

Exams 30%
Midterm (15 %): date TBD
Final (15%): to be scheduled, at a slot to be agreed upon by the students.

The Midterm and Final exams are closed-book. You may, however, bring one standard 8.5" by 11" piece of paper with any hand-written notes you deem appropriate or significant (front and back). No electronic devices allowed, so make sure you have a backpack/bag to put away your devices.
Quizzes 20%
We will have two weekly online quizzes.

Project 45%
We will have 2 projects, accounting in your final grade as follows: P1 – 20 % and P2 – 25%.

Policy for Late Submissions: you start the mini-semester with 3 free days that can be used towards any projects this semester. When you run out of free days, a late assignment will be accepted up to 24 hours after the deadline with a penalty of 30%.
You are required to develop your project using a private repository at github.tamu.edu that you will share with instructor(s) and with grader(s). Your repository is a documentation of your development process. You are required to have clear commit messages that document the bugs you identified, corresponding fixes, addition of test cases, etc. Your github usage will impact your grade. For example, having all the code added to the repository and submitted within a short period of time (the magic of going from no code to a working solution quickly) will result in a very low grade.

We find that the most valuable learning in system software courses happen through hands-on implementation experience. The projects are designed to be easily manageable as long as you work on them regularly. Last minute sprints usually do not work well.

Class Involvement 5%
Participation in class and interaction with other students are both important to your success in the course. We expect you to participate in online discussions on Piazza. Over the course of the semester, you should make at least five substantive, interesting posts to the discussion forum (either initiating a new topic or responding to someone else). These posts should be directly related to the course material. Be proactive in helping other students.

Textbook or Resource Material:
The course materials are extracted from various research articles published in ACM and IEEE journals/conferences and technical reports on the topics described in the course description. We will also use white papers and documentation from cloud solution providers. The instructors will provide references to the course materials online prior to the start of the program.

Schedule

<table>
<thead>
<tr>
<th>Spring ’18 (14-week offering)</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Distributed Computing, Datacenters, and Cloud Services</td>
</tr>
<tr>
<td>2</td>
<td>Key-value stores and memcached</td>
</tr>
<tr>
<td>3</td>
<td>Group membership and Zookeeper; Failure Detection; fault-tolerant memcached</td>
</tr>
<tr>
<td>4</td>
<td>Peer-to-peer systems; Gnutella; Chord</td>
</tr>
<tr>
<td>5</td>
<td>MapReduce</td>
</tr>
<tr>
<td>6</td>
<td>HDFS</td>
</tr>
<tr>
<td>7</td>
<td>Datacenter Networking</td>
</tr>
<tr>
<td>8-9</td>
<td>Cloud resource management</td>
</tr>
<tr>
<td>10</td>
<td>Cloud Outages and Problem determination</td>
</tr>
<tr>
<td>11-12</td>
<td>Use cases</td>
</tr>
<tr>
<td>13-14</td>
<td>Scalability</td>
</tr>
</tbody>
</table>
During each week, the expectation is that students will be assigned a set of individual problems to do on their own time, as well as have a single timed event, either individual or team. Timed events will take place during scheduled lab time.

Absences
University excused absences will be handled consistent with Student Rule 7 [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). Students missing a timed individual or team event for an excused reason will either be given the opportunity to make up the event at a future time, or will not have the base score for that period used in their grade calculation. For the individual problems that students do on their own time, it is expected that students will work on these problems throughout the period of time they are assigned, so that any absences of less than 2 days should not affect the student’s ability to complete the problem on time.

Academic Honesty:
The Aggie Honor Code is: “An Aggie does not lie, cheat, or steal, or tolerate those who do.” Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: [www.tamu.edu/aggiehonor/](http://www.tamu.edu/aggiehonor/)

For this course, a significant amount of work will require solving problems for which a solution or test data might be available or posted online. Unless otherwise specified, students are not allowed to seek out or examine code/data for these problems on their own, prior to turning in their own solutions. Doing so will be considered a violation of the honor code, and students caught doing so will be referred to the honor council, regardless of whether the actual code is copied or not.

ADA Statement:
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).
Course Change Request

New Course Proposal

Date Submitted: 10/10/17 3:12 pm

Viewing: CYBR 484 : Professional Internship

Last edit: 10/30/17 10:27 am

Changes proposed by: rags

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Ragsdale</td>
<td><a href="mailto:rags@tamu.edu">rags@tamu.edu</a></td>
<td>9798457398</td>
</tr>
</tbody>
</table>

Course prefix: CYBR
Course number: 484

Department: College of Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
College/Program Course Level Rubric

Academic Level (alternate)
Graduate

Effective term
2018-2019

Complete Course Title
Professional Internship

Abbreviated Course Title
PROFESSIONAL INTERNSHIP

Catalog course description
Directed internship in an organization to provide students with a learning experience supervised by professionals in organizational settings appropriate to the student's professional objectives.

Prerequisites and Restrictions

Concurrent Enrollment
No

Should catalog prerequisites / concurrent enrollment be enforced?
No

Crosslistings
No

Crosslisted With

Stacked
No

Stacked with

Semester: 0-6
Credit Hour(s) (per week): 0-6
Contact Hour(s): 0
Lecture: 0
Lab: 0
Other: 0

CIP/Fund Code: 1110030006

In Workflow
1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 10/11/17 3:47 pm
   Tim Jacobs (tjacob): Approved for CLEN Department Head
2. 10/11/17 9:23 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/24/17 1:17 pm
   Eileen Hoy (ehoy): Rollback to Curricular Services Review for EN Committee Preparer UG
4. 10/30/17 10:27 am
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
5. 11/12/17 2:11 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
6. 11/17/17 3:52 pm
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
7. 11/17/17 4:03 pm
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
8. 11/19/17 9:46 am
   Sandra Williams (sandra-williams): Approved for UCC Preparer

https://nextcatalog.tamu.edu/courseleaf/approve#
Default Grade Mode  Satisfactory/Unsatisfactory(S)

Alternate Grade Modes

Method of instruction
Practicum

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)
Yes

Learning Outcomes
Meets traditional face-to-face learning outcomes.

Describe how learning outcomes are met or provide justification why they are not met.
Professional internship off site.

Hours
Meets traditional face-to-face hours.

Describe how hours are met or provide justification why they are not met.
Professional internship off site.

Will this course be taught as a distance education course?
Yes

I verify that I have reviewed the FAQ for Export Control Basics for Distance Education.
Yes

Is 100% of this course going to be taught in Texas?
Yes

Will classroom space be needed for this course?
No

This will be a required course or an elective course for the following programs:

Required (select program)

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration?
No

Has/will this course be(en) submitted for Writing or Communication consideration?
No

Has/will this course be(en) submitted for ICD consideration?
No

---

Course Syllabus

https://nextcatalog.tamu.edu/courseleaf/approve#
Syllabus: Upload syllabus

Upload syllabus CYBR484.docx

Letters of support or other documentation
No

Additional information

Reviewer Comments
Eileen Hoy (ehoy) (10/24/17 1:17 pm): Rollback: Correct Academic Level
Sandra Williams (sandra-williams) (12/04/17 3:55 pm): UCC approved in December.

Reported to state? Add
Course title and number  CYBR 484: Professional Internship  
Term  TBD  
Meeting times and location  Online at https://ecampus.tamu.edu  

Course Description and Prerequisites

CYBR 484: Professional Internship. Credit 0 to 6. Directed internship in an organization to provide students with a learning experience supervised by professionals in organizational settings appropriate to the student’s professional objectives.

Learning Outcomes or Course Objectives

By the end of the course, students should be able to:
- Synthesize learning content from University coursework toward practical application in a real world environment.
- Apply corporate or agency procedures, practices, and culture to successfully complete an internship in a professional setting.
- Demonstrate effective oral and written communication skills with colleagues on the job.

Instructor Information

Name  
Office Phone  
Email  
Office Hours  
Office Location  
Text/Voice  

Textbook and/or Resource Material

No textbook is required for the class. The course meets on https://ecampus.tamu.edu

Grading Policies

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Agreement Completed</td>
<td>333</td>
</tr>
<tr>
<td>Mid-Term Evaluation completed and submitted in ecampus</td>
<td>333</td>
</tr>
<tr>
<td>Reflection <strong>AND</strong> final evaluation submitted in ecampus</td>
<td>334</td>
</tr>
</tbody>
</table>
Please note that total points establish the grade you will receive in this course. This course is graded on a satisfactory/unsatisfactory basis.

700 – 1000 points: Satisfactory
< 700 points: Unsatisfactory

This is a major core course and a grade of a minimum of a “Satisfactory” (700 points) must be achieved in order to count toward degree requirements. Failure to meet that standard will result in the need to repeat the course.

Attendance

The attendance requirements for this course are that you attend your internship assignment in order to complete the required professional engagement.

Absences for the purpose of assignments in the course may only be excused as defined by the Texas A&M University Student Rules available at http://student-rules.tamu.edu/rule07.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

Academic Integrity

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”
For additional information please visit: http://aggiehonor.tamu.edu

Calendar of Activities, Assignment Milestones
(subject to change as necessary)

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 8/31</td>
<td>First day of classes</td>
</tr>
<tr>
<td>F 9/4</td>
<td>12:00 (noon) Learning agreement due; students without a completed learning agreement will be dropped from the course</td>
</tr>
<tr>
<td>F 10/16</td>
<td>17:00 Mid-Term evaluation due in ecampus</td>
</tr>
<tr>
<td>T 12/15</td>
<td>17:00 Reflection due in ecampus</td>
</tr>
<tr>
<td>W 12/16</td>
<td>17:00 Final evaluation due in ecampus</td>
</tr>
</tbody>
</table>
Course Change Request

New Course Proposal

Date Submitted: 09/24/17 6:22 pm

Viewing: ECEN 470 : Laser Principles and Applications

Last edit: 09/25/17 3:46 pm

Changes proposed by: karsilay

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aydin Karsilay</td>
<td><a href="mailto:karsilay@tamu.edu">karsilay@tamu.edu</a></td>
<td>(979) 458-3555</td>
</tr>
</tbody>
</table>

Course prefix: ECEN  
Course number: 470

Department: Electrical & Computer Eng
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)

Academic Level: Graduate
(alternate)
Effective term: 2018-2019

Complete Course Title: Laser Principles and Applications
Abbreviated Course Title: LASER PRINCIPLES & APP

Catalog course description:
Working understanding of the basic principles of laser science, the major components of laser system and their function; examples of laser applications to science, engineering, medicine and industry.

Prerequisites and Restrictions:
Grade of C or better in ECEN 322 and ECEN 370; junior or senior classification.

Concurrent Enrollment: No
Should catalog prerequisites / concurrent enrollment be enforced? Yes

Enforced Prerequisites / Concurrent Enrollment

| And/Or | Course Prefix/Number | Min Grade/Score | Academic Level | Concurrency? |

In Workflow
1. ECEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Provost II
10. President
11. Curricular Services
12. Banner

Approval Path
1. 09/24/17 6:24 pm
   Aydin Karsilay (karsilay): Approved for ECEN Department Head
2. 09/25/17 3:47 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 7:31 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 8:51 am
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:29 am
   Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/13/17 6:18 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:56 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve#
Course Syllabus

https://nextcatalog.tamu.edu/courseleaf/approve/#
Syllabus: Upload syllabus

Upload syllabus [ecen470-syllabus.docx]

Letters of support or other documentation

No

Additional information

Reviewer Comments

Sandra Williams (sandra-williams) [04/21/17 8:42 am]: Rollback: Please update learning outcomes. Committees will want to see measurable outcomes. You may want to consider answering the question "By the end of this course, students will be able to..."(ex., describe, analyze, design, etc.).

Sandra Williams (sandra-williams) [09/25/17 3:47 pm]: Update received.

Bob Knight (bob-knight) [11/29/17 4:02 pm]: Are the learning outcomes suitable for a 400 level course?

Sandra Williams (sandra-williams) [12/04/17 3:55 pm]: UCC approved in December.

Reported to state?

Add

Key: 17940
Course title and number: Laser Principles and Applications, ECEN 470
Term (e.g., Fall 200X): Fall 2018
Meeting times and location: TBD

Course Description and Prerequisites

Working understanding of the basic principles of laser science, the major components of laser system and their function. Examples of laser applications to science, engineering, medicine and industry. **Prerequisites:** Grade of C or better in ECEN 322 and 370; junior or senior classification.

Learning Outcomes or Course Objectives

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

- Understand the basic theory of lasers
- Identify the major components of laser systems
- Describe laser construction and operation
- Illustrate laser applications to science, engineering and medicine

Instructor Information

Name: Dr. Peter Rentzepis
Telephone number: (979) 845-7250
Email address: prentzepis@tamu.edu
Office hours: TBD
Office location: 325C WEB

Textbook and/or Resource Material

The course material will draw from technical research papers and portions of the following books:
List of references and other material will be provided during the term.

Grading Policies

<table>
<thead>
<tr>
<th>Graduate:</th>
<th>Undergraduate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework: 25%</td>
<td>Homework: 25%</td>
</tr>
<tr>
<td>Midterm exam: 25%</td>
<td>Midterm exam: 30%</td>
</tr>
<tr>
<td>Project: 20%</td>
<td>Mini-project: 10%</td>
</tr>
<tr>
<td>Final Exam: 30%</td>
<td>Final exam: 35%</td>
</tr>
</tbody>
</table>

Discussion of homework assignments between students is encouraged, however copying is not allowed. Assignments must be handed-in on time to receive full credit. No late homework and project or reports will be accepted unless an official document (e.g., doctor’s note) justifies the absence. (Student Rule #7: http://student-rules.tamu.edu/rule07)

Grading Scale

Grading Scale: 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 F.
# Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 1-2  | Introduction to lasers  
  a. components  
   1. lasing media  
   2. pumping sources  
   3. resonator mirrors  
  b. CW lasers  
  c. pulsed  
  d. operation  
  e. signal(s)  
   1. frequency  
   2. intensity  
   3. coherency, time, space  
   4. time width  
   5. frequency width |
| 2-3  | Basic concepts  
  1 Wave properties of light,  
  2 Maxwell’s equations  
  3 Quantum mechanics  
  4-6  
  a. Particle properties of light  
  b. Bohr atom, energy levels  
  c. Uncertainty principle  
  d. Absorption emission transitions |
| 7    | Stimulated processes  
  **Midterm Exam**  
  Inverted population, amplification  
  8    | Radiative radiationless transitions  
  Picosecond and femtosecond lasers  
  9-10 | Semiconductor lasers  
  11-12  
  a. energy levels,  
  b. direct indirect gap band gap energy  
  c. p-n doping, p-n junctions  
  d. heterojunctions  
  e. LED, quantum wells  
  13-14 | Types of lasers and their Applications to basic science and technology and industry  
  **Project Report Due** |

## Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

## Academic Integrity

For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
Course Change Request

New Course Proposal

Date Submitted: 10/19/17 4:13 pm

Viewing: GEOS 471: Data Methods in Geosciences Laboratory

Last edit: 10/20/17 3:33 pm

Changes proposed by: allisonharms

Programs referencing this course

In Workflow
1. CLGE Department Head UG
2. Curricular Services Review
3. GE Committee Preparer UG
4. GE Committee Chair UG
5. GE College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allison Harms</td>
<td><a href="mailto:allisonharms@tamu.edu">allisonharms@tamu.edu</a></td>
<td>979-845-2559</td>
</tr>
</tbody>
</table>

Course prefix     GEOS
Course number     471

Department       College of Geosciences
College/School   Geosciences
Academic Level   Undergraduate

Undergraduate course level justification (Select One)

Prerequisites

All prerequisites will be enforced through COMPASS.

Effective term     2018-2019

Complete Course Title
Data Methods in Geosciences Laboratory

Abbreviated Course Title
DATA METHODS GEOS LAB

Catalog course description

Computational techniques required to perform statistical analysis of geosciences data; probability, confidence intervals, linear regression, analysis of variance and principle component analysis and performing statistical analysis using MATLAB; techniques for visualization and interpretation of results; emphasis on real world problems found in environmental, atmospheric and oceanographic sciences.

Prerequisites and Restrictions

 Junior or senior classification; MATH 151, STAT 211, STAT 301, STAT 302, or STAT 303, or concurrent enrollment; concurrent enrollment in GEOS 470; or approval of instructor.

Concurrent Enrollment
No

Should catalog prerequisites?
Yes

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
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</thead>
<tbody>
<tr>
<td>And</td>
<td>MATH 151</td>
<td>D</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>Or</td>
<td>STAT 211</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Or</td>
<td>STAT 301</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Or</td>
<td>STAT 302</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
<tr>
<td>Or</td>
<td>STAT 303</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
<tr>
<td>And</td>
<td>GEOS 470</td>
<td>D</td>
<td>UG</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Crosslistings: No  Crosslisted With:  
Stacked: No  Stacked with:  

Semester: 1  Credit Hour(s):  
Repeatable for credit: No  Three-peat: No  
CIP/Fund Code: 4006010002  Default Grade Mode: Letter Grade(G)  
Alternate Grade Modes: Satisfactory/Unsatisfactory  
Method of instruction: Laboratory  
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No  
Will this course be taught as a distance education course: No  
Is 100% of this course going to be taught in Texas: Yes  
Will classroom space be needed for this course: Yes  
This will be a required course or an elective course for the following programs:

Required (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-ENGS) Environmental Geosciences - BS</td>
</tr>
</tbody>
</table>

Elective (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-ENST) Environmental Studies - BS</td>
</tr>
</tbody>
</table>

Has/will this course be(en) submitted for core curriculum consideration: No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: GEOS 471 for 2018.pdf

Letters of support or other documentation: No

Additional information:

Reviewer Comments:
- Sandra Williams (sandra-williams) (10/08/17 3:51 pm): Rollback: Syllabus prerequisites and form prerequisites do not match (GEOS 470 versus OCNG 456); include specific link to student rule 7.
- Sandra Williams (sandra-williams) (10/20/17 11:16 am): Update received.
- Sandra Williams (sandra-williams) (10/20/17 3:33 pm): Update received.
- Sandra Williams (sandra-williams) (12/04/17 3:56 pm): UCC approved in December.

Reported to state?: Add
Course title and number  GEOS 471 Data Methods in Geosciences Laboratory
Credit hours  1
Term  Fall 2018
Meeting times and location  9:10-11:10 a.m. Monday, O&M 208

Course Description and Prerequisites
GEOS 471 is a laboratory course designed to be taken concurrently with GEOS 470. In GEOS 471 students will learn the computational techniques required to perform statistical analysis of geosciences data. The course covers all the topics and methods from GEOS 470: probability, confidence intervals, linear regression, analysis of variance, and principle component analysis but focuses on how to perform statistical analysis using MATLAB computing software as well as how to visualize and interpret their results. This is an applied course; students will learn practical methods to analyze data and apply the statistical methods taught in GEOS 470. GEOS 471 emphasizes application to real-world problems found in environmental, atmospheric, and oceanographic sciences. In each lab students will learn new MATLAB tools used in statistical analysis of geosciences data.

Prerequisites: Junior or senior classification: MATH 151 and STAT 211, 301, 302, or 301, or concurrent enrollment or approval of instructor.

Concurrent Course
Concurrent enrollment in GEOS 470 is required.

Course Objective and Learning Outcomes
Course objective: Learn how to use MATLAB computer software to process, analyze, visualize, and interpret data commonly found in the geosciences.

Learning Outcomes: By taking this course, the student, upon completion, will be able to:
1. Identify and distinguish the basic forms and functions of the MATLAB workspace
2. Calculate basic statistical metrics and their significant using MATLAB
3. Apply MATLAB functions used in probability, linear regression, analysis of variance, and principle component analysis and interpret the output
4. Compose short computer programs in MATLAB programming language to statistically analyze geosciences data
5. Produce and interpret graphs and tabular representations of geosciences data
6. Use MATLAB to test hypotheses, interpret the results, and quantify the uncertainty

Instructor Information
Name  Henry Potter
Telephone number  979 845 0405
Email address  hpotter@tamu.edu
Office hours  Tuesday & Thursday 11:00-12:00 & 2:10-4:00
Textbooks


Attendance, Homework, and Grading Policy

**Attendance Policy:** Please refer to Academic Rule #7. Attendance ([http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)). If you would like a copy of the rule, it will be provided to you.

**Homework Policy:** This course consists of weekly lab assignments. Any part of the assignment not completed in class has to be completed as homework and submitted the following week. Late homework will not be accepted unless an approved Texas A&M University excuse applies or prior arrangement has been approved. Prior arrangement constitutes approval 24-hours before assignment is due. If prior approval is granted for any reason except an approved University excuse, your assignment grade will be docked 3% per day late.

**Grading Policy:** The course will consist of 10 graded laboratory assignments, each worth 10%.

Grading Scale

Grades for all students are based on the following grading system:

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

Copyright and Plagiarism Policy

All materials generated for this class are copyrighted. These materials include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless permission is expressly granted.

As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without with research cannot be safely communicated.

If you have any questions regarding plagiarism, please consult the latest issue of the *Texas A&M University Students Rules*, student-rules.tamu.edu, under the section “Scholastic Dishonesty”.

Course Calendar

**Week 1**
Introduction to MATLAB programming environment. Input/Output (I/O)

**Week 2**
Vectors, matrices, and basic arithmetic. MATLAB functions: `rand`, `sin`, `cos`, `exp`

**Week 3**
Basic plotting. MATLAB functions: `plot`, `title`, `xlabel`, `ylabel`, `xlim`, `ylim`, `bar`
Application: Monthly mean Mauna Loa CO₂
Week 4
Basic statistics. MATLAB functions: mean, mode, median, max, min
Application: Texas Automated Buoy System (TABS) salinity and sea surface temperature

Week 5
Probability and probability distributions. MATLAB functions: hist, factorial, binopdf, poisspdf
Application: U.S. precipitation rates and distributions

Week 6
Linear regression: MATLAB functions: scatter, corrcoef
Application: National Buoy Data Center (NDBC) wave climate (daily, seasonal, and yearly trends)

Week 7
Linear regression 2: confidence intervals, p-values, and t-statistics. MATLAB functions: fcdf, tinv, line
Application: NDBC wave climate (daily, seasonal, and yearly trends)

Week 8
Linear regression 3: interpolation and extrapolation. MATLAB functions: interp1, interp2
Application: NDBC wave climate (predicting the wave climate of the future)

Week 9
One-way ANOVA. MATLAB functions: anova1, multcompare
Application: A laboratory study of whitecap decay rate (the affect of salinity)

Week 10
Two-way ANOVA. MATLAB function: anovan
Application: A laboratory study of whitecap decay rate (the affect of salinity and temperature)

Week 11
Principle Component Analysis. MATLAB functions: pca, zscore
Application: The components that influence hurricane and typhoon intensity

Week 12
Principe Component Analysis 2. No new functions
Application: The components that lead to hypoxia in the Gulf of Mexico

Week 13
Cluster Analysis metrics and theory. MATLAB commands: linkage, dendrogram
Application: Evolutionary similarities between species

Week 14
Lab review and wrap-up.

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that
provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Academic Integrity**

For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”
Course Change Request

New Course Proposal

Date Submitted: 09/25/17 12:57 pm

Viewing: ITDE 399 : High Impact Experience for Interdisciplinary Engineers

Last edit: 09/26/17 9:58 pm
Changes proposed by: kmoses

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Tim Jacobs</td>
<td><a href="mailto:tjJacobs@tamu.edu">tjJacobs@tamu.edu</a></td>
<td>979-458-5649</td>
</tr>
</tbody>
</table>

Course prefix ITDE  
Course number 399

Department College of Engineering
College/School College of Engineering
Academic Level Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level Graduate
(alternate)

Effective term 2018-2019

Complete Course Title  
High Impact Experience for Interdisciplinary Engineers

Abbreviated Course Title HIGH IMPACT EXP ITDE ENGRS

Catalog course description
Participation in an approved high-impact learning practice; reflection of professional outcomes from engineering body of knowledge; documentation and self-assessment of learning experience at mid-curriculum point.

Prerequisites and Restrictions
ITDE major; junior or senior classification.

Concurrent Enrollment No
Should catalog prerequisites / concurrent enrollment be enforced? No
Crosslisted With No
Stacked No

Semester Credit Hour(s) Contact Hour(s) Lecture Lab Other Total

https://nextcatalog.tamu.edu/courseleaf/approve/
Repeatable for credit? No
Three-peat? No
CIP/Fund Code 1499990006
Default Grade Mode Letter Grade (G)
Alternate Grade Modes Satisfactory/Unsatisfactory
Method of instruction Independent Study
 Internship
 Lecture
 Research

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No

Is 100% of this course going to be taught in Texas? No

Will classroom space be needed for this course? No

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
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</thead>
<tbody>
<tr>
<td>(BS-ITDE) Interdisciplinary Engineering - BS</td>
</tr>
</tbody>
</table>

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No

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**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus [2017.09.12 ENGIE 399 High Impact Exps for ITDE.rtf](#)

Letters of support or other documentation No
Sandra Williams (sandra-williams) (09/24/17 2:39 pm): Rollback: Prerequisites: ITDE is not a classification - changed to ITDE major - do you need to put "junior or senior classification"? Does the undergraduate course level justification question need to be updated?
Sandra Williams (sandra-williams) (09/26/17 9:58 pm): Update received.
Sandra Williams (sandra-williams) (12/04/17 3:56 pm): UCC approved in December.

Reported to state?
Add
Course title and number  ITDE 399: High Impact Experience for Interdisciplinary Engineers
Term  Fall 2018
Meeting times and location  TBA

Course Description and Prerequisites

ITDE 399: High Impact Experience for Interdisciplinary Engineers. (0-0). Credit 0. Student participation in an approved high-impact learning practice; reflection on professional outcomes from the National Society of Professional Engineers’ Engineering Body of Knowledge; documentation and self-assessment of learning experience at mid-curriculum point. Prerequisites: ITDE major and junior/senior classification.

Learning Outcomes

The BS in Interdisciplinary Engineering requires graduates of its program to have achieved certain educational outcomes as part of the ABET accreditation process, which are listed below. Depending on the specific high-impact learning practice experienced by the student, this course can help students develop one or more of the following:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Further, the BS in Interdisciplinary Engineering program recognizes the Key Attributes of the Professional Engineer of the Future, as listed in the National Society of Professional Engineers’ Engineering Body of Knowledge. Depending on the specific high-impact learning practice experienced by the student, this course can help them develop one or more of the attributes which can help them become a successful and relevant professional engineer, or help prepare them for graduate or professional school:

- Analytical and practical;
- Thorough and detail-oriented in design;
- Creative and innovative;
- Communicative;
- Knowledgeable about the application of sciences and mathematics;
- Thoroughly knowledgeable in a selected field of engineering and conversant in related technical fields;
- Knowledgeable about and skillful in business and management;
- Able to provide leadership—with ability to effect change in strategies, tactics, policies, and procedures in project and other roles;
- Professional and positive in attitude;
- Aware of societal and historical considerations in the global context;
- Aware of and compliant with relevant laws, regulations, standards, and codes;
- Licensed as a professional engineer and knowledgeable about engineering ethics and applicable codes of professional conduct; and
- Dedicated to lifelong learning

**Instructor Information**

Name: Dr. Timothy J. Jacobs  
Telephone number: 979-862-4355  
Email address: tjjacobs@tamu.edu  
Office hours: TBA  
Office location: 312 MEOB

**Textbook and Resource Material**

There is no textbook for this course. Class resources will be posted on the course website at http://ecampus.tamu.edu to include the following:
- Description of the Reflection/Critical Thinking assignment.
- Texas Board of Professional Engineers (TBPE) Supplementary Experience Record (SER) form for documentation of high-impact learning practice. A template and example will be provided.
- Evaluation rubric.

**Grading Policies**

This course will be graded on a pass/fail (S/U) basis only.

Criteria for achieving a passing grade are successful completion of all of the following assignments listed below by due date. The course instructor will determine whether any submission will count as “successful completion” or “incomplete.” Submissions deemed “incomplete” will be returned to the student for revision and re-submission within 7 days; only 1 opportunity for revision will be given for any assignment. A second submission deemed “incomplete” will result in a failing grade of “U,” and the student will be required to repeat the course.

**Due on 1st Class Day**
- Pre-approval of ENGE 399 from the course instructor.

**Due 1 week before 1st Final Exam Day**
- Documentation of activities performed in high-impact learning practice using TBPE SER form
- Reflection/Critical Thinking assignment. The assignment encompasses a meaningful self-reflection piece that discusses the impact of the high-impact learning practice characteristics and the overall experience on the student’s erudition. The self-reflection piece can be a written (traditional) essay, a video or online blog, a series of journal entries, or some other accepted and approved form as decided by the course instructor. The self-reflection piece will be first evaluated by the supervisor/mentor that oversees the high-impact learning practice; their signature / email is required prior to submission for grading.

**Attendance and Make-up Policies**

All absences will be handled according to TAMU Student Rule 7 (http://student-rules.tamu.edu/rule07), which states: “The university views class attendance as an individual student responsibility. Students are
expected to attend class and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due [i.e. this syllabus].” Homework assignments will have due dates extended by the number of days of excused absence. Individual arrangements will be made for exams and quizzes missed due to an excused absence. All excused absences must have appropriate documentation submitted to the instructor. For illnesses or injuries resulting in absences of less than 3 days, the “Explanatory Statement for Absence from Class” is sufficient. For longer periods, a doctor’s note will be required. Please contact the instructor as soon as you know that you will miss a quiz or exam date, or if due to an emergency, as soon as possible afterwards. Students are not required to notify the instructor or provide an excuse for a class day on which no graded assignment or activity takes place.

Course Topics, Calendar of Activities, Major Assignment Dates
This course requires you to participate in an approved high-impact learning practice in support of your B.S. in Interdisciplinary Engineering degree. Your high-impact learning practice should be one of the following (Section number):

- 3/500: Internship or Co-op Experience (http://careercenter.tamu.edu/guides/)
- 3/501: Study Abroad (http://studyabroad.tamu.edu/)
- 3/502: Grand Challenge Scholars Program (http://engineering.tamu.edu/programs/gcsp)
- 3/503: The University, College, or Departmental Honors Program (http://honorsprograms.tamu.edu/)
- 3/504: Aggie’s Invent (https://engineering.tamu.edu/aggiesinvent)
- 3/505: Startup Aggieland (http://startupaggieland.com/)
- 3/506: Engineers without Borders Project (http://www.ewbtamu.org/projects/)
- 3/508: Undergraduate research (https://engineering.tamu.edu/graduate/undergraduate-bridges)
- 3/509: TAMU Minor or Certificate Programs, as approved by the department
- 3/510: Department design competitions, like the High Altitude Balloon Club (http://astrocenter.tamu.edu/stem-outreach/high-altitude-balloon-club/)
- 3/511: Leadership in student organizations
- 3/512: Other high-impact learning practice as approved by the department

You should register for the section appropriate to your pre-approved high-impact learning practice. For example, section 500 = Internship, section 501 = Study Abroad, etc.

You must have pre-approval for your specific high-impact learning practice from the course instructor by the first class day of the term in which you take this course. Your pre-approval submission must include a professional supervisor/mentor who will oversee your work, certify hours worked, and aid in assessment of your final deliverables (see “Grading Policies”).

As you near completion of your high-impact learning practice, you will prepare your final deliverables (see “Grading Policies”) in which you are required to reflect deeply on what you have learned in your high-impact learning practice as well as your B.S. curriculum to-date. These items will be shared with your supervisor/mentor to help her/him better understand how to provide a good learning experience.

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability
Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

Academic Integrity
For additional information, please visit:
http://aggiehonor.tamu.edu

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

As engineers, we have a strong code of ethics that we must follow, in order to ensure the safety of the public. Texas A&M students, as part of their professional training, are expected to understand and follow the Aggie honor code, which may be found at www.tamu.edu/aggiehonor. The Dean of Faculties asks us to remind you that, “Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on all work submitted in this course. Ignorance of the rules does not exclude any member of the TAMU community from the requirements of the processes of the Honor System.”

Violation of this rule will result in a severe penalty that can include a grade of zero on the quiz or exam, reduction of semester grade, and/or report to the Aggie Honor Council, as appropriate.
Course Change Request

New Course Proposal

Date Submitted: 09/25/17 1:06 pm

Viewing: ITDE 499 : Degree Plan Approval for ITDE

Last edit: 09/26/17 10:00 pm

Changes proposed by: kmoses

| Faculty Senate Number |

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Tim Jacobs</td>
<td><a href="mailto:tjacobs@tamu.edu">tjacobs@tamu.edu</a></td>
<td>979-862-4355</td>
</tr>
</tbody>
</table>

Course prefix: ITDE
Course number: 499

Department: College of Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level: Graduate
(alternate)

Effective term: 2018-2019

Complete Course Title: Degree Plan Approval for ITDE
Abbreviated Course Title: DEGREE PLAN APPROVAL FOR ITDE

Catalog course description
Successful completion of approved Bachelor of Science in Interdisciplinary Engineering degree plan.

Prerequisites and Restrictions
ITDE major; junior or senior classification; ENGR 402 or registration therein.

Concurrent Enrollment: No

Should catalog prerequisites / concurrent enrollment be enforced? No

Crosslistings: No
Crosslisted With

Stacked: No
Stacked with

Semester: 0
Credit Hour(s): 0
Contact Hour(s): 0
Lecture: 0
Lab: 0
Other: 0
Repeatable for credit? No
Three-peat? No

In Workflow
1. CLEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 09/25/17 8:46 pm
   Tim Jacobs (tjacobs): Approved for CLEN Department Head
2. 09/26/17 10:00 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 7:31 pm
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 9:05 am
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:36 am
   Sandra Williams (sandra-williams): Approved for EN College Dean UG
6. 11/13/17 6:20 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:56 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: ENGE 499 Degree Plan Approval for ITDE Syllabus.rtf

Letters of support or other documentation: No

Additional information

Reviewer Comments: Sandra Williams (sandra-williams) [09/24/17 2:41 pm]: Rollback: Prerequisites; ITDE is not a classification - change to ITDE major - do you need to put "junior or senior classification"? Does the undergraduate course level justification question need to be updated?
Sandra Williams (sandra-williams) (09/26/17 9:59 pm): Update received.
Sandra Williams (sandra-williams) (12/04/17 3:56 pm): UCC approved in December.

Reported to state?

Add
Course title and number  ITDE 499: Degree Plan Approval for Interdisciplinary Engineers
Term  Fall 2018
Meeting times and location  TBA

Course Description and Prerequisites
ITDE 499: Degree Plan Approval for Interdisciplinary Engineers. (0-0). Credit 0. Successful completion of approved Bachelor of Science in Interdisciplinary Engineering degree plan. Prerequisites: ITDE major, junior or senior classification, and ENGR 402 or registration therein.

Learning Outcomes
The BS in Interdisciplinary Engineering requires graduates of its program to have achieved certain educational outcomes as part of the ABET accreditation process, which are listed below. By satisfying the approved degree plan for the BS ITDE student, he/she will have acquired the following outcomes:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- An ability to function on multidisciplinary teams
- An ability to identify, formulate, and solve engineering problems
- An understanding of professional and ethical responsibility
- An ability to communicate effectively
- The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Further, the BS in Interdisciplinary Engineering program recognizes the Key Attributes of the Professional Engineer of the Future, as listed in the National Society of Professional Engineers’ Engineering Body of Knowledge. By completing this course, and thus satisfying their approved degree plan for ITDE, the student will have developed the attributes which can help them become a successful and relevant professional engineer, or help prepare them for graduate or professional school:

- Analytical and practical;
- Thorough and detail-oriented in design;
- Creative and innovative;
- Communicative;
- Knowledgeable about the application of sciences and mathematics;
- Thoroughly knowledgeable in a selected field of engineering and conversant in related technical fields;
- Knowledgeable about and skillful in business and management;
- Able to provide leadership—with ability to effect change in strategies, tactics, policies, and procedures in project and other roles;
- Professional and positive in attitude;
• Aware of societal and historical considerations in the global context;
• Aware of and compliant with relevant laws, regulations, standards, and codes;
• Licensed as a professional engineer and knowledgeable about engineering ethics and applicable codes of professional conduct; and
• Dedicated to lifelong learning

Instructor Information

Name Dr. Timothy J. Jacobs
Telephone number 979-862-4355
Email address tjacobs@tamu.edu
Office hours TBA
Office location 312 MEOB

Textbook and Resource Material

There is no textbook for this course. There is no resource material for this course.

Grading Policies

This course will be graded on a pass/fail (S/U) basis only.

Criteria for achieving a passing grade are successful completion of the approved degree plan for the Bachelor of Science in Interdisciplinary Engineering. Because of the highly flexible nature of the BS ITDE degree, this course will ensure students have met the approved degree requirements for their specific degree plan. Students who deviate from their approved degree plan will receive a U (failing grade). Students may retake the course once they have satisfied their approved degree plan requirements.

Attendance and Make-up Policies

Attendance policy does not apply to this course.

Course Topics, Calendar of Activities, Major Assignment Dates

There are no topics, calendar, or major assignments due. Student receive a Satisfactory grade when they have completed their degree plan requirements as approved by the BS ITDE Advisory Committee.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability
Services building at the Student Services at White Creek complex on west campus or call 9798451637. For additional information, visit http://disability.tamu.edu.

**Academic Integrity**

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“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

As engineers, we have a strong code of ethics that we must follow, in order to ensure the safety of the public. Texas A&M students, as part of their professional training, are expected to understand and follow the Aggie honor code, which may be found at www.tamu.edu/aggiehonor. The Dean of Faculties asks us to remind you that, “Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on all work submitted in this course. Ignorance of the rules does not exclude any member of the TAMU community from the requirements of the processes of the Honor System.”

Violation of this rule will result in a severe penalty that can include a grade of zero on the quiz or exam, reduction of semester grade, and/or report to the Aggie Honor Council, as appropriate.
Course Change Request

New Course Proposal

Date Submitted: 11/15/17 9:56 am

Viewing: MEEN 406: Energy Management in Industry

Last edit: 11/17/17 8:25 am

Changes proposed by: dbeck

Contact Senate Number

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doug Beck</td>
<td><a href="mailto:dbeck@tamu.edu">dbeck@tamu.edu</a></td>
<td>979-862-3334</td>
</tr>
<tr>
<td>Tracey Rueschhoff</td>
<td><a href="mailto:trueschhoff@tamu.edu">trueschhoff@tamu.edu</a></td>
<td>979-862-4629</td>
</tr>
</tbody>
</table>

Course prefix: MEEN  
Course number: 406

Department: Mechanical Engineering
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level: Graduate

Effective term: 2018-2019

Complete Course Title
Energy Management in Industry

Abbreviated Course Title
ENERGY MANAGEMENT IN INDUSTRY

Catalog course description
Energy systems and components frequently encountered in industrial environments; application of basic principles of thermodynamics, heat transfer, fluid mechanics and electrical machinery to the analysis and design of industrial system components and systems; improved energy utilization.

Prerequisites and Restrictions
Grade of C or better in MEEN 260 and MEEN 315.

Concurrent Enrollment
No

Should catalog prerequisites / concurrent enrollment be enforced?
Yes

Enforced Prerequisites / Concurrent Enrollment

In Workflow
1. MEEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Provost II
10. President
11. Curricular Services
12. Banner

Approval Path
1. 11/15/17 12:07 pm Tillie McVay (t_mcvay): Approved for MEEN Department Head
2. 11/17/17 8:26 am Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 11/17/17 2:53 pm Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 11/17/17 3:54 pm Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 11/17/17 4:04 pm Sandra Williams (sandra-williams): Approved for EN College Dean UG
6. 11/19/17 9:48 am Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:56 pm Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Course Syllabus

https://nextcatalog.tamu.edu/courseleaf/approve/
Texas A&M University  
Department of Mechanical Engineering  

MEEN 406  
Energy Management in Industry  
Spring 2018  

Course Syllabus

**Course Catalog Description:** Energy systems and components frequently encountered in industrial environments; application of basic principles of thermodynamics, heat transfer, fluid mechanics and electrical machinery to the analysis and design of industrial system components and systems. Improved energy utilization.

**Pre/Co-requisites:** MEEN 260, MEEN 315.

**Learning Outcomes:** At the end of the semester, you will be able to:

- Describe best practices for industrial energy audits, and energy management programs
- Analyze Utility Rate Schedules and understand how a facility is being billed for their energy use.
- Describe the operation and common application of common industrial energy systems, including steam systems, compressed air systems, cooling systems, heating systems, motors, lighting, and power generation technologies.
- Identify common industrial energy recommendations, and calculate the associated energy and cost savings
- Synthesize course concepts and techniques to conduct an energy audit of a manufacturing facility

**Instructor:** Dr. Bryan Rasmussen, 304 MEOB, brasmussen@tamu.edu

**Office Hours:** Dates and times posted weekly. The Instructor will be available most weeks in-person, by phone, and/or by video-conference.

**Lecture:** Two 75 minute lectures per week.


**Course Website:** Course material will be posted on eCampus. Please check this site regularly. Email will be the primary means of communication. Please check your email daily to receive any updates on homework assignments, lectures, etc.
Topics Covered:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Energy Management Systems, Energy Audits, Instrumentation</td>
</tr>
<tr>
<td>2</td>
<td>Economic Analysis: Simple Payback, Internal Rate of Return, Present/Future Value</td>
</tr>
<tr>
<td>3</td>
<td>Electrical and Natural Gas Utilities: Infrastructure, Rate Schedules, Analysis</td>
</tr>
<tr>
<td>4</td>
<td>Electrical Systems: Analysis, Power Factor Correction</td>
</tr>
<tr>
<td>5</td>
<td>Lighting: Technologies, Control Systems, Analysis</td>
</tr>
<tr>
<td>6</td>
<td>Motors and Drives: Best Practices, Fans, Pumps, Preventative Motor Maintenance</td>
</tr>
<tr>
<td>7</td>
<td>Compressed Air Systems: Equipment, Specifications, Best Practices, Controls</td>
</tr>
<tr>
<td>8</td>
<td>Industrial Control Systems, Smart Manufacturing, Industrial Cybersecurity</td>
</tr>
<tr>
<td>10</td>
<td>Steam Systems: Fundamentals, Best Practices, Steam Traps, Boiler Operation, Simulation</td>
</tr>
<tr>
<td>11</td>
<td>Waste Heat Management: Insulation, Waste Heat Recovery</td>
</tr>
<tr>
<td>12</td>
<td>Industrial Cooling: Process Cooling, Chillers, HVAC Systems, Cooling Towers</td>
</tr>
<tr>
<td>13</td>
<td>Alternative Energy and Energy Storage</td>
</tr>
<tr>
<td>14</td>
<td>Codes, Standards, Certifications and Careers</td>
</tr>
</tbody>
</table>

Grading: Letter grades will be assigned by the following criterion:
A > 90, 90 > B > 80, 80 > C > 70, 70 > D > 60, 60 > F.

Numerical grades will be determined based on the following breakdown:

<table>
<thead>
<tr>
<th></th>
<th>MEEN 406</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Assignments</td>
<td>15%</td>
</tr>
<tr>
<td>Homework and Quizzes</td>
<td>35%</td>
</tr>
<tr>
<td>Case Study</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Exams: There will be two examinations. These will be administered online through eCampus. Students are required to take all exams to receive a passing grade in the course. During the exam students will be allowed to use the textbook, notes, and online resources. Students are not allowed to provide or receive assistance from any individual while taking the exam. The exam will consist of multiple choice, short answer, and calculation-based questions. No partial credit is awarded on the exams. The mid-term exam will cover material presented in the first half of the course. The final exam is comprehensive, but with a significant focus on material presented in the second half of the course.

Homework: The primary problem-solving homework for this course will be administered and submitted online. For these assignments, students will be allowed multiple attempts to complete the assignments. The highest score will be used for grading purposes. Additional homework assignments
may be given as determined by the instructor. These assignments may be group or individual assignments.

**Reading Assignments:** Students will be expected to complete the required reading assignments. Evidence of completed reading assignments is required, and will be submitted online.

**Case Studies:** Students will be required to submit case study report(s), evaluating the energy efficiency of actual facilities. Completion of the case studies is required for a passing grade.

**Attendance Policy:** Please refer to Student Rule 7 ([http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07))

**Copyrighted Material and Plagiarism:** The handouts used in this course are **copyrighted**, which means that you can not copy or disseminate the course material unless we expressly grant you permission. This includes all materials generated for this class, which include but are not limited to syllabi, assignments, exams, in-class materials, review sheets, etc.

As commonly defined, plagiarism consists of passing off as one’s own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the latest issue of the *Texas A&M University Student Rules*, under the section “Scholastic Dishonesty.”

**Academic Integrity Statement:** I have a **zero tolerance** policy for academic misconduct in any form (please see the website for definitions: [http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules#Definitions](http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules#Definitions)). This would include plagiarism in any form, and any unauthorized help on homework or examinations. Any violation will be reported to the Aggie Honor System Office, and the student will receive an F* for the course.

**Aggie Honor Code:** "An Aggie does not lie, cheat, or steal, or tolerate those who do."

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: [www.tamu.edu/aggiehonor/](http://www.tamu.edu/aggiehonor/).

On all course work, assignments, and examinations at Texas A&M University, the following Honor Pledge shall be preprinted and signed by the student:

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."
Americans with Disabilities Act (ADA) Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.
Course Change Request

New Course Proposal

Date Submitted: 10/17/17 1:28 pm

Viewing: MSEN 205 : Materials in Society

Last edit: 10/18/17 4:24 pm

Changes proposed by: jules.henry

Programs referencing this course

BS-MSEN: Materials Science and Engineering - BS

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jules Henry</td>
<td><a href="mailto:jules.henry@tamu.edu">jules.henry@tamu.edu</a></td>
<td>979-862-1089</td>
</tr>
</tbody>
</table>

Course prefix: MSEN  
Course number: 205

Department: Materials Science & Engr
College/School: College of Engineering
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level (alternate): Graduate

Effective term: 2018-2019

Complete Course Title: Materials in Society
Abbreviated Course Title: MATERIALS IN SOCIETY

Catalog course description

Introduction to the study and practice of materials science and engineering; current topics in materials research and development, focusing on the impact of advanced materials on engineering fields and society; application of scientific engineering principals to guiding materials engineering process, with examples drawn from real-life case studies.

Prerequisites and Restrictions
Grade of C or better in MSEN 201, or concurrent enrollment; or approval of instructor.

Concurrent Enrollment: No

Should catalog prerequisites / concurrent enrollment be enforced? Yes

In Workflow
1. MSEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 10/17/17 2:58 pm
Ibrahim Karaman (karaman): Approved for MSEN Department Head
2. 10/18/17 4:25 pm
Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 10/25/17 7:32 pm
Eileen Hoy (ehoy): Approved for EN Committee Preparer UG
4. 10/27/17 9:10 am
Prasad Enjeti (enjeti): Approved for EN Committee Chair UG
5. 10/27/17 9:41 am
Prasad Enjeti (enjeti): Approved for EN College Dean UG
6. 11/13/17 6:22 pm
Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 3:57 pm
Sandra Williams (sandra-williams): Approved for UCC Chair
### Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
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<tbody>
<tr>
<td>Crosslistings</td>
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<tr>
<td>Stacked</td>
<td>No</td>
<td>Stacked with</td>
<td></td>
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<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit (per week): Lecture:</th>
<th>Lab:</th>
<th>Other:</th>
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<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

- Repeatable for credit? No
- Three-peat? No
- CIP/Fund Code: 1418010006
- Default Grade Mode: Letter Grade (G)
- Alternate Grade Modes: Satisfactory/Unsatisfactory
- Method of instruction: Lecture
- Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No
- Will this course be taught as a distance education course? No
- Is 100% of this course going to be taught in Texas? Yes
- Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Required (select program)</th>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(BS-MSEN) Materials Science and Engineering - BS</td>
</tr>
</tbody>
</table>

**Elective (select program)**

- Has/will this course been submitted for core curriculum consideration? No
- Has/will this course been submitted for Writing or Communication consideration? No
- Has/will this course been submitted for ICD consideration? No
## Course Syllabus

<table>
<thead>
<tr>
<th>Syllabus:</th>
<th>Upload syllabus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload syllabus</td>
<td>MSEN 205 syllabus.docx</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Letters of support or other documentation</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information</td>
<td></td>
</tr>
</tbody>
</table>

**Reviewer Comments**

Sandra Williams (sandra-williams) (12/04/17 3:57 pm): UCC approved in December.

**Reported to state?**

Add
MSEN 205, Materials in Society  
Credits 2, 2 Lecture Hours

Term: Fall 2018

Meeting times and locations: TBD  
Office hours/location: TBD / RDMC 227

Instructor Information: Dr. Patrick Shamberger  
Reed McDonald Bldg. 227, patrick.shamberger@tamu.edu, 979-458-1086

Course (catalog) description: Introduction to the study and practice of materials science and engineering; current topics in materials research and development, focusing on the impact of advanced materials on engineering fields and society; application of scientific engineering principals to guiding materials engineering process, with examples drawn from real-life case studies.

Course Prerequisites: MSEN 201, or concurrent enrollment; or approval of instructor.

Learning Outcomes: At the end of this course, students should be able to:
1. Describe the role of materials science and engineering in the technology development process.
2. Provide examples where new materials discoveries have led to impactful technologies.
3. Apply scientific and engineering principals to identify key materials performance metrics in practical applications.
4. Apply materials selection techniques to guide the materials development and engineering design processes.
5. Relate ethical implications of materials selection and development in engineering design.
6. Describe the principal components of the MSEN BS degree program and expectations of students, and list department and university resources available to help students succeed.


Additional Material: Lecture notes, assignments, solutions, grades, project instructions, and additional material will be available at http://ecampus.tamu.edu.

Communication Policy: My preferred contact is by e-mail (please include "MSEN 205" in the title of all e-mails). I will respond to all course-related e-mails within 8 business hours. Feedback on in-class assignments, etc. will be provided within 5 business days, unless otherwise stated. Graded projects will be returned within 1 week. Please e-mail to arrange for a visit outside of normal office hours.
Why am I here? Materials scientists and engineers develop the building blocks for tomorrow’s technologies. From better batteries to faster computer chips, from longer lasting biomedical implants to lighter airplanes, materials scientists and engineers innovate solutions for society’s grand challenges.

This course marks the start of your progression down the path to becoming a professional materials scientist or materials engineer, and your integration into our department community. The BS in Materials Science and Engineering will introduce you to the principal tools that are used in the field. This course will help introduce you to some of the current applications of those tools, and the impact of materials development on society. This course consists of two parts: 1) a seminar series introducing current high impact areas in materials research, and 2) a practicum session focused on exploring real-life case studies. These two parts, and accompanying course assignments, will help introduce you into the field and help motivate how different elements of materials science and engineering combine in the materials development and engineering design process.

How is this course organized? Each week will consist of a seminar, followed by a lecture where case studies and approaches to analyze these case studies will be introduced. Students will work through portions of the case studies in class in small teams, and will complete follow-up assignments on the case studies as homework. The structure of this course will loosely parallel the topics covered in MSEN 201, Fundamentals of Materials.

Course Outline:

Wk 1  Seminar: Introduction to MSEN department and program (UG Advisor Staff)
Case Studies: Material price and availability (Rare Earth Alloys) [J&A ch 3]

Wk 2  Seminar: Introduction to Grand Engineering Challenges (Shamberger)
Case Studies: Materials selection (Electrification: High Power Lines) [DataVis]

Wk 3  Seminar: Computational Materials Design: Computers have learned how to play Chess, Go and even Mario Kart! Could they help us discover the materials of the future? (Arroyave) {Alloy Design}
Case Studies: Materials toxicity (Water Supply and Distribution: History of Lead in Plumbing)

Wk 4  Seminar: Shape Morphing Technologies: How Shape Memory Alloys Impact Our Lives From Transportation to Medicine (Karaman) {Metals Structure}
Case Studies: Embodied Energy Costs (Photovoltaics)

Wk 5  Seminar: High Temperature Ceramics. (Radovic) {Ceramics}
Case Studies: Sustainability/Lifecycle Analysis (Aluminum vs. Glass containers)

Wk 6  Seminar: What if energy were free and limitless? Fusion power and how to get there. (Demkowicz) {Defects}
Case Studies: Elastic modulus: Stretching and Bending

Wk 7  Seminar: Modern metallurgy: Transporting mankind. (Srivastava) {Mechanical Properties}
Case Studies: Modulus-limited design (Case Studies) [J&A ch 7]

Week 8 Seminar: Smaller is Stronger: Probing the Strength of Materials at the Micro- and Nano-scale. (Pharr) {Mechanical properties}
Case Studies: Materials Strength: Yield Strength and Ultimate strength in materials
Week 9 Seminar: Breaking good: Graceful failure in materials. (Needleman) {Materials Failure}
Case Studies: Yield-limited design (Case Studies) [J&A ch 12]

Wk 10 Seminar: Extreme Deformation Processing. (Hartwig) {Strengthening Mechanisms}
Case Studies: Probabilistic failure/Fracture (Testing Standards) [J&A ch 15]

Wk 11 Seminar: Helicopter blades and rocket bodies: Composites for aerospace. (Creasy)
{Composites}
Case Studies: Fracture (Case Studies) [J&A ch 16]

Wk 12 Seminar: Stopping Rust. (Castaneda) {Corrosion}
Case Studies: Fatigue (Case Studies) [J&A ch 19]

Wk 13 Seminar: Keeping cool: Development of materials to transport and store heat and keep all your favorite electronics running. (Shamberger) {Thermal Properties}
Case Studies: Creep (Turbine Blade) [J&A ch 23]

Wk 14 Seminar: From Quantum Mechanics to Future Optoelectronics: A Perspective from Computational Materials Scientist. (Qian) {Electrical/Optical Properties}
Case Studies: Corrosion (Case Studies) [J&A ch 24/26]

Course Policies and Procedures:
Changes in schedule:
The instructor reserves the right to change the order and content of lectures as necessary (and to make up for holidays and unscheduled class cancellations).

Grading Scale (Standard Letter Scale):
A = 90-100 %
B = 80-89.99 %
C = 70-79.99 %
D = 60-69.99 %
F = <60 %

Grading Policies:
Weekly Case Studies Reports (10 pts each/total 140 pts)
Project 1: Materials in society (40 pts) {week 6}
Project 2: Airplane wing materials selection (40 pts) {week 10}
Project 3: Role of materials in NAE Grand Challenges (40 pts) {week 14}
Total: (260 pts)

Course will not be graded on a curve.

Late Work Policy:
No late work will be accepted, unless in the case of excused attendance. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07.

Attendance:
The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully, as this course depends strongly on group work. University
rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07. Please come on time. Silence cell-phones and other electronic distractions.

**Make-up Policy:**
If an absence is excused, the instructor will either provide the student an opportunity to make up any in class work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student Rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the Honor Code.

Other absences may be excused at the discretion of the instructor with prior notification and proper documentation.

In cases where prior notification is not feasible (e.g., accident or emergency) the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class.

Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence.

**Academic Integrity:**
Aggie Honor Code: "An Aggie does not lie, cheat, or steal or tolerate those who do." For additional information please visit: http://aggiehonor.tamu.edu.

**Americans with Disabilities Act (ADA) Policy Statement:**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services in 701 West Campus Blvd, 1224 TAMU, College Station, Texas 77843-1224, or call 845-1637. For additional information visit http://disability.tamu.edu.
### Course Change Request

**New Course Proposal**

*Date Submitted: 10/18/17 9:01 pm*

**Viewing:** MSEN 399 : High Impact Professional Development

*Last edit: 10/19/17 2:32 pm*

Changes proposed by: jules.henry

- Programs referencing this course
  - BS-MSEN: Materials Science and Engineering - BS

**Faculty Senate Number**

**Contact(s)**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jules Henry</td>
<td><a href="mailto:jules.henry@tamu.edu">jules.henry@tamu.edu</a></td>
<td>979-862-1089</td>
</tr>
</tbody>
</table>

**Course prefix** MSEN  
**Course number** 399

**Department** Materials Science & Engr

**College/School** College of Engineering

**Academic Level** Undergraduate

**Undergraduate course level justification (Select One)**

- Prerequisites

  *All prerequisites will be enforced through COMPASS.*

**Academic Level** Graduate  
**Effective term** 2018-2019

**Complete Course Title** High Impact Professional Development

**Abbreviated Course Title** HIGH IMPACT PROF DEVELOPMENT

**Catalog course description**  
Student participation in an approved high-impact learning practice; reflection on professional outcomes from engineering body of knowledge; documentation and self-assessment of learning experience at mid-curriculum point.

**Prerequisites and Restrictions**  
Grade of C or better in MSEN 205 and MSEN 281; junior or senior classification.

**Concurrent Enrollment** No

**Should catalog prerequisites / concurrent enrollment be enforced?** Yes

**Enforced Prerequisites / Concurrent Enrollment**

---

**In Workflow**

1. MSEN Department Head
2. Curricular Services Review
3. EN Committee Preparer UG
4. EN Committee Chair UG
5. EN College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

**Approval Path**

1. 10/18/17 10:37 pm  
   Ibrahim Karaman (karaman): Approved for MSEN Department Head

2. 10/19/17 2:42 pm  
   Sandra Williams (sandra-williams): Approved for Curricular Services Review

3. 10/25/17 7:32 pm  
   Eileen Hoy (ehoy): Approved for EN Committee Preparer UG

4. 10/27/17 9:12 am  
   Prasad Enjeti (enjeti): Approved for EN Committee Chair UG

5. 10/27/17 9:44 am  
   Prasad Enjeti (enjeti): Approved for EN College Dean UG

6. 11/13/17 6:22 pm  
   Sandra Williams (sandra-williams): Approved for UCC Preparer

7. 12/04/17 3:57 pm  
   Sandra Williams (sandra-williams): Approved for UCC Chair
<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
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<tbody>
<tr>
<td>And</td>
<td>MSEN 205</td>
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</tr>
<tr>
<td></td>
<td>MSEN 281</td>
<td>C</td>
<td>UG</td>
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</table>

Crosslistings: No
Crosslisted With

Stacked: No
Stacked with

<table>
<thead>
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<th>Semester</th>
<th>Credit</th>
<th>Contact Hour(s) (per week):</th>
<th>Lecture:</th>
<th>Lab:</th>
<th>Other:</th>
<th>Total</th>
<th>Concurrency?</th>
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<td></td>
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</table>

Repeatable for credit? No
Three-peat? No
CIP/Fund Code: 1418010006
Default Grade Mode: Satisfactory/Unsatisfactory(5)
Alternate Grade Modes
Method of instruction: Independent Study

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No

Is 100% of this course going to be taught in Texas? No

Will classroom space be needed for this course? No

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-MSEN) Materials Science and Engineering - BS</td>
</tr>
</tbody>
</table>

Required (select program)

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: MSEN 399 High Impact Professional Development.docx

Letters of support or other documentation: No

Additional information

Reviewer Comments
- Sandra Williams (sandra-williams) (10/18/17 5:08 pm): Rollback: Would it be problematic to change the course title of this course to be consistent with the other 299/399 courses in the college of engineering? Page 3 of the syllabus references "MSEN 399 High Impact Professional Development."
- Sandra Williams (sandra-williams) (10/19/17 2:42 pm): Update received.
- Sandra Williams (sandra-williams) (12/04/17 3:57 pm): UCC approved in December.

Reported to state? Add
Course title and number: MSEN 399: High Impact Professional Development

Term: Fall 2018

Meeting times and location: TBA

Course Description
Student participation in an approved high-impact learning practice; reflection on professional outcomes from engineering body of knowledge; documentation and self-assessment of learning experience at mid-curriculum point.

Prerequisites
MSEN 205 and MSEN 281; Junior or senior classification.

Learning Outcomes
The following student learning outcomes will be achieved upon successful completion of this course:

1. Students will be able to communicate effectively. This outcome will be observed and measured through the student’s self-reflection piece (see Reflection/Critical Thinking assignment in the Grading Policies section).

2. Students will be able to identify the characteristic(s) of their high-impact learning experience. The characteristics list includes (a) A deepened understanding of knowledge through purposeful tasks; (b) Extended and substantive interactions with faculty and peers; (c) Interactions with people who are different than themselves; (d) Collaborative learning with frequent feedback; and (e) Opportunities to apply knowledge in different settings. This outcome will be observed and measured through the student’s self-reflection piece.

3. Students will be able to describe and discuss the impact of the high-impact learning experience. This outcome will be observed and measured through the student’s self-reflection piece.

Instructor Information
Name: Dr. Patrick Shamberger
Telephone number: 979.458.1086
Email address: patrick.shamberger@tamu.edu
Office hours: TBA
Office location: 227 RDMC

Textbook and Resource Material
There is no textbook for this course. Class resources will be posted on the course website at http://ecampus.tamu.edu to include the following:

- Description of the Reflection/Critical Thinking assignment.
- Texas Board of Professional Engineers (TBPE) Supplementary Experience Record (SER) form for documentation of high-impact learning practice. A template and example will be provided.
- Evaluation rubric.
Grading Policies

This course will be graded on a pass/fail (S/U) basis only.

Criteria for achieving a passing grade are successful completion of all of the following assignments listed below by due date. The course instructor will determine whether any submission will count as “successful completion” or “incomplete.” Submissions deemed “incomplete” will be returned to the student for revision and re-submission within 7 days; only one opportunity for revision will be given for any assignment. A second submission deemed “incomplete” will result in a failing grade of “U,” and the student will be required to repeat the course.

Attendance and Make-up Policies

Attendance: All absences will be handled according to TAMU Student Rule 7 (http://student-rules.tamu.edu/rule07), which states: “The university views class attendance as an individual student responsibility. Students are expected to attend class and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due [i.e. this syllabus].” All excused absences must have appropriate documentation submitted to the instructor. For illnesses or injuries resulting in absences of less than 3 days, the “Explanatory Statement for Absence from Class” is sufficient. For longer periods, a doctor’s note will be required. Please contact the instructor as soon as you know that you will miss a quiz or exam date, or if due to an emergency, as soon as possible afterwards. Students are not required to notify the instructor or provide an excuse for a class day on which no graded assignment or activity takes place.

Make-up Policy: If an absence is excused, then the student will be provided an opportunity to make up any homework assignments, quizzes, exams, or other work that contributes to the final grade with a due date that extends the original due date by the number of days of the excused absence. Individual arrangements will be made for exams and quizzes missed due to an excused absence.

Course Topics, Calendar of Activities, Major Assignment Dates

This course requires you to participate in an approved high-impact learning practice in support of your B.S. in Materials Science and Engineering degree. Your high-impact learning practice should be one of the following:

- Internship or Co-op Experience (http://careercenter.tamu.edu/guides/)
- Study Abroad (http://studyabroad.tamu.edu/)
- Grand Challenge Scholars Program (http://engineering.tamu.edu/programs/gcsp)
- The University, College, or Departmental Honors Program (http://honorsprograms.tamu.edu/)
- Aggie’s Invent (https://engineering.tamu.edu/aggiesinvent)
- Startup Aggieland (http://startupaggieland.com/)
- Engineers without Borders Project (http://www.ewbtamu.org/projects/)
- AggieE_Challenge (https://engineering.tamu.edu/easa/areas/enrichment/aggie-challenge)
- Undergraduate research (https://engineering.tamu.edu/graduate/undergraduate-bridges)
- TAMU Minor or Certificate Programs, as approved by the department
- Design competitions, as approved by the department
- Leadership in student organizations, as approved by the department
- Other high-impact learning practice as approved by the department

You must have pre-approval for your specific high-impact learning practice from the course instructor by the first class day of the term in which you take this course. Your pre-approval submission must include a professional supervisor/mentor who will oversee your work, certify hours worked, and aid in assessment of your final deliverables (see “Grading Policies”).
As you near completion of your high-impact learning practice, you will prepare your final deliverables (see “Grading Policies”) in which you are required to reflect deeply on what you have learned in your high-impact learning practice as well as your B.S. curriculum to-date. These items will be shared with your supervisor/mentor to help her/him better understand how to provide a good learning experience.

**Due on 1st Class Day**
- Pre-approval of MSEN 399 High Impact Professional Development from the course instructor.
- Identification of the professional supervisor/mentor who will oversee your work, certify hours worked, and aid in assessment of your final deliverables (see “Grading Policies”).

**Due 1 week before 1st Final Exam Day**
- Documentation of activities performed in high-impact learning experience using TBPE SER form.
- Reflection/Critical Thinking assignment. The assignment encompasses a meaningful self-reflection piece that discusses the impact of the high-impact learning experience characteristics and the overall experience on the student’s erudition. The self-reflection piece can be a written (traditional) essay, a video or online blog, a series of journal entries, or some other accepted and approved form as decided by the course instructor. The self-reflection piece will be evaluated by the supervisor/mentor that oversees the high-impact learning experience.

**Americans with Disabilities Act (ADA)**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services in 701 West Campus Blvd, 1224 TAMU, College Station, Texas 77843-1224, or call 845-1637. For additional information visit http://disability.tamu.edu.

**Academic Integrity**
*For additional information please visit: http://aggiehonor.tamu.edu*

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

As engineers, we have a strong code of ethics that we must follow, in order to ensure the safety of the public. Texas A&M students, as part of their professional training, are expected to understand and follow the Aggie honor code, which may be found at www.tamu.edu/aggiehonor. The Dean of Faculties asks us to remind you that, “Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on all work submitted in this course. Ignorance of the rules does not exclude any member of the TAMU community from the requirements of the processes of the Honor System.”

Violation of this rule will result in a severe penalty that can include a grade of zero on the quiz or exam, reduction of semester grade, and/or report to the Aggie Honor Council, as appropriate.
Course Change Request

New Course Proposal

Date Submitted: 10/05/17 6:53 am

Viewing: **MXET 400 : Mechatronics II – Industrial Robotic Systems**

Last edit: 10/05/17 9:02 am
Changes proposed by: jporter

<table>
<thead>
<tr>
<th>Programs referencing this course</th>
</tr>
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<tbody>
<tr>
<td>BS-MXET: Multidisciplinary Engineering Technology - BS</td>
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Faculty Senate Number

<table>
<thead>
<tr>
<th>Contact(s)</th>
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<th>E-mail</th>
<th>Phone</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Jay Porter</td>
<td><a href="mailto:jporter@tamu.edu">jporter@tamu.edu</a></td>
<td>979-845-1459</td>
</tr>
</tbody>
</table>

Course prefix: **MXET**  
Course number: **400**

Department: **Eng Tech & Ind Distribution**

College/School: **College of Engineering**

Academic Level: **Undergraduate**

Undergraduate course level justification (Select One)

Prerequisites

*All prerequisites will be enforced through COMPASS.*

<table>
<thead>
<tr>
<th>Academic Level</th>
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</table>

Effective term: **2018-2019**

Complete Course Title

Mechatronics II – Industrial Robotic Systems

Abbreviated Course Title

MECHATRONICS II

Catalog course description

Study and analysis of industrial robotics and automation processes necessary for robot-centric work cell design and operation.

Prerequisites and Restrictions

- Grade of C or better in MXET 300; grade of C or better in ESET 462 or concurrent enrollment, junior or senior classification in multidisciplinary engineering technology.

Concurrent Enrollment

No

Should catalog prerequisites / concurrent enrollment be enforced?

Yes

https://nextcatalog.tamu.edu/courseleaf/approve/
<table>
<thead>
<tr>
<th>And/Or</th>
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| Crosslistings | No | Crosslisted With |
| Stacked       | No | Stacked with |

| Semester | 3 |
| Credit Hour(s) | |

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<th>Lab: 3</th>
<th>Other: 0</th>
<th>Total 5</th>
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</thead>
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| Repeatable for credit? | No |
| Three-peat? | No |

| CIP/Fund Code | 1504050019 |
| Default Grade Mode | Letter Grade(G) |
| Alternate Grade Modes | Satisfactory/Unsatisfactory |

| Method of instruction | Lecture and Laboratory |
| Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) | No |

| Will this course be taught as a distance education course? | No |
| Is 100% of this course going to be taught in Texas? | Yes |
| Will classroom space be needed for this course? | Yes |

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Required (select program)</th>
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</tr>
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<tbody>
<tr>
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<td>Has/will this course be(en) submitted for core curriculum consideration?</td>
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<tr>
<td>Has/will this course be(en) submitted for Writing or Communication consideration?</td>
<td>No</td>
</tr>
<tr>
<td>Has/will this course be(en) submitted for ICD consideration?</td>
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# Course Syllabus

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<th>Letters of support or other documentation</th>
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<th>Reviewer Comments</th>
<th>Sandra Williams (sandra-williams) (10/04/17 10:00 pm): Rollback: There is a reference in the syllabus to ENTC 489. Please fix.</th>
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<td>Sandra Williams (sandra-williams) (10/05/17 9:03 am): Update received.</td>
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<td></td>
<td>Sandra Williams (sandra-williams) (12/04/17 3:57 pm): UCC approved in December.</td>
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<th>Reported to state?</th>
<th>Add</th>
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[Key: 147187]
Course title and number  MXET 400 – Mechatronics II – Industrial Robotic Systems
Term     Fall, 2018
Meeting times and location Lecture – TR 9:35 – 10:50, F 110    Lab – W 4:00 – 6:40, T205

Course Description and Prerequisites
MXET 400 Mechatronics II – Industrial Robotic Systems. (2-3). Credit 3. Study and analysis of industrial robotics and automation processes necessary for robot-centric work cell design and operation. Prerequisite: C or better in MXET 300 and co-enrollment in ESET 462.

Learning Outcomes
Students working individually and in teams will achieve the following learning outcomes:

• Demonstrate ability to use and apply coordinate systems necessary to create path planning for a multi-joint robotic arm.
• Analyze, assemble, and test a multi-joint robotic arm.
• Design, implement, and test a commercially available monitoring and control system to the robotic arm.
• Design and integrate an end effector to accomplish fundamental industrial tasks using the robotic system.
• Prepare detailed technical reports on all labs and course project including test data necessary for design validation.

Instructor Information
Name: Joseph A. Morgan, D.E., P.E.
Email: jmorgan@tamu.edu
Phone: 979-575-0128 (text and voice)
Office: Fermier 111
Office Hours: MW 3:00 – 4:00 PM. Recommend making an appointment.

Textbook and Resource Materials

Lab Text: Lab assignments will be posted on eCampus. The lab will consist of a number of lab assignments and a course project.
Grading Policies

Grading: In this course, homework assignments, laboratory assignments, quizzes, and exams will be used for evaluation of your performance. Students should reference http://student-rules.tamu.edu/rule07 for student responsibility for attendance.

<table>
<thead>
<tr>
<th>Component</th>
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<tr>
<td>Midterm Exam</td>
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</tr>
<tr>
<td>System Design Presentation</td>
<td>20% *</td>
</tr>
<tr>
<td>Laboratory</td>
<td>15% *</td>
</tr>
<tr>
<td>Project Presentation</td>
<td>25% *</td>
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<tr>
<td>Quizzes</td>
<td>10% - Homework modifies this grade</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</table>

*Students will work in teams of four for all lab exercises and course project. Each student will generate and submit their own lab report for each lab assignment and the course project. To receive a C or better grade in MXET 400 all lab assignments must be completed and an acceptable and complete lab report submitted.

Course Grade:

- >= 90  A
- >= 80  B
- >= 70  C
- >= 60  D
- <  60  F

Exams: There will be a Midterm exam. Unless there is a university approved absence, no make-up exams will be given – refer to section on Make-up Policy below. Unexcused absence from an exam or quiz will result in a grade of 0.

Presentations: Each team will prepare and present two major presentations. These formal presentations will be conducted by the student teams with each student preparing and delivering an equal portion the presentations.

Homework: Being able to work each homework problem is necessary to do well in the class. Homework assignments will be completed using the appropriate computer software. In addition, all designs should be saved to thumb drive so that students can be called upon to present, explain and defend their design during lecture.

Peer Grading: As requested by the course instructor, students will participate in the grading assessment of presentations and documentations produced by other students in the course.

Laboratory: The lab exercises have been developed to provide the students with the design capabilities and laboratory practices to successfully complete the course project. Each team of four students must successfully design and implement mechanical and electronic subsystems necessary to perform selected tasks typically needed in industrial applications.

Quizzes: Random quizzes will be given in class and may be given in lab sessions. Unless there is a university approved absence, no makeup quizzes will be given and the student will receive a 0 grade for any missed quizzes. Quizzes will be given at the START of class. Arriving after the quiz begins will result in student not taking the quiz.

Tardiness: Both homework and lab assignments are due at the beginning of class on the date assigned. Late assignments will not be accepted without either a valid university approved excuse or prior consent from the professor.
Attendance: Attendance is mandatory and will be taken at the beginning of all lecturers and labs. Students should reference http://student-rules.tamu.edu/rule07 for student responsibility for attendance.

Attendance and Make-up Policies

All absences will be handled according to TAMU Student Rule 7 (http://student-rules.tamu.edu/rule07), which states: “The university views class attendance as an individual student responsibility. Students are expected to attend class and to complete all assignments. Instructors are expected to give adequate notice of the dates on which major tests will be given and assignments will be due [i.e. this syllabus].” Homework assignments will have due dates extended by the number of days of excused absence. Individual arrangements will be made for exams and quizzes missed due to an excused absence. All excused absences must have appropriate documentation submitted to the instructor. For illnesses or injuries resulting in absences of less than 3 days, the “Explanatory Statement for Absence from Class” is sufficient. For longer periods, a doctor’s note will be required. Please contact the instructor as soon as you know that you will miss a quiz or exam date, or if due to an emergency, as soon as possible afterwards. Students are not required to notify the instructor or provide an excuse for a class day on which no graded assignment or activity takes place.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Robotic Arm Coordinate Systems</td>
<td>Lab Introduction and Safety</td>
</tr>
<tr>
<td>2</td>
<td>Translation of Coordinate Systems</td>
<td>cRIO Architecture</td>
</tr>
<tr>
<td>3</td>
<td>Analysis of Robot Joint</td>
<td>LabVIEW for cRIO</td>
</tr>
<tr>
<td>4</td>
<td>Robot-centric Work Cell</td>
<td>Simple control of joint</td>
</tr>
<tr>
<td>5</td>
<td>Design Presentations</td>
<td>Control of multiple joints</td>
</tr>
<tr>
<td>6</td>
<td>Industrial Applications</td>
<td>End Effector research</td>
</tr>
<tr>
<td>7</td>
<td>End Effector Selection</td>
<td>End Effector design</td>
</tr>
<tr>
<td>8</td>
<td>Robotic Arm Design</td>
<td>Integration of end effector to robot arm</td>
</tr>
<tr>
<td>9</td>
<td>Midterm</td>
<td>Task definition and software</td>
</tr>
<tr>
<td>10</td>
<td>Project Design and Analysis</td>
<td>System integration and testing</td>
</tr>
<tr>
<td>11</td>
<td>Project Design and Analysis</td>
<td>System level testing</td>
</tr>
<tr>
<td>12</td>
<td>Special Topics</td>
<td>System level testing</td>
</tr>
<tr>
<td>13</td>
<td>Special Topics</td>
<td>Final Documentation Preparation</td>
</tr>
<tr>
<td>14</td>
<td>Project Presentations/Demonstrations</td>
<td>Project Close Out</td>
</tr>
</tbody>
</table>

The table indicates the planned schedule that will be used in the Fall 2018 semester. Some variation to this schedule may be required to accommodate guest lecturers.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at
the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Academic Integrity**

*For additional information please visit: http://aggiehonor.tamu.edu*

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

As engineers, we have a strong code of ethics that we must follow, in order to ensure the safety of the public. Texas A&M students, as part of their professional training, are expected to understand and follow the Aggie honor code, which may be found at www.tamu.edu/aggiehonor. The Dean of Faculties asks us to remind you that, “Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on all work submitted in this course. Ignorance of the rules does not exclude any member of the TAMU community from the requirements of the processes of the Honor System.”

Violation of this rule will result in a severe penalty that can include a grade of zero on the quiz or exam, reduction of semester grade, and/or report to the Aggie Honor Council, as appropriate.
Course Change Request

New Course Proposal

Date Submitted: 11/15/17 10:11 am

Viewing: PHYS 206 : Newtonian Mechanics for Engineering and Science

Last edit: 11/16/17 8:34 pm
Changes proposed by: hwalker

Programs referencing this course
- BS-BAEN: Biological and Agricultural Engineering - BS
- BS-ENGE: Engineering First-Year Curriculum
- BS-CPSC: Computer Science - BS
- BS-CHEN-QT: Chemical Engineering - BS, Qatar Campus
- BS-ELFN-QT: Electrical Engineering - BS, Qatar Campus

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heather Walker</td>
<td><a href="mailto:hwalker@tamu.edu">hwalker@tamu.edu</a></td>
<td>9798621653</td>
</tr>
</tbody>
</table>

Course prefix   PHYS
Course number   206
Department      Physics and Astronomy
College/School  Science
Academic Level  Undergraduate
Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level  Graduate
(alternate)
Effective term  2018-2019

Complete Course Title
Newtonian Mechanics for Engineering and Science
Abbreviated Course Title
NEWTONIAN MECHANICS ENGR & SCI

Catalog course description
Calculus-based introductory Newtonian mechanics; laws of physical motion for solution of science and engineering problems.

Prerequisites and Restrictions
Grade of C or better in MATH 151 or MATH 171, or equivalent.

Concurrent Enrollment
No

Should catalog prerequisites / concurrent enrollment be enforced?
Yes

In Workflow
1. PHYS Department Head
2. Curricular Services Review
3. SC Committee Preparer UG
4. SC Committee Chair UG
5. SC College Dean UG
6. UCC Preparer
7. UCC Chair
8. Faculty Senate Preparer
9. Faculty Senate
10. Provost II
11. President
12. Curricular Services
13. Banner

Approval Path
1. 11/15/17 2:20 pm
   Lewis Ford (a-ford): Approved for PHYS Department Head
2. 11/16/17 8:34 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 11/17/17 9:26 am
   Sara Thippin (sarathippin): Approved for SC Committee Preparer UG
4. 11/17/17 10:02 am
   Lucas Macri (lmacri): Approved for SC Committee Chair UG
5. 11/17/17 10:03 am
   Lucas Macri (lmacri): Approved for SC College Dean UG
6. 11/17/17 11:13 am
   Sandra Williams (sandra-williams): Approved for UCC Preparer
7. 12/04/17 4:11 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/#
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>)</th>
<th>Concurrency?</th>
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<tbody>
<tr>
<td></td>
<td>MATH 151</td>
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<tr>
<td>Or</td>
<td>MATH 171</td>
<td>C</td>
<td>UG</td>
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Crosslistings: No
Crosslisted With: No

Stacked: No
Stacked with: No

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<th>Semester</th>
<th>Credit Hour(s)</th>
<th>Contact Hour(s) (per week):</th>
<th>Lecture:</th>
<th>Lab:</th>
<th>Other:</th>
<th>Total</th>
<th></th>
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<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Repeatable for credit? No
Three-peat? No
CIP/Fund Code 4008010002
Default Grade Mode Letter Grade(G)
Alternate Grade Modes Satisfactory/Unsatisfactory
Method of instruction Lecture
Will sections of this course be taught as non-traditional? [i.e., parts of term, distance education] No

Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

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<td>(BS-ELEN) Electrical Engineering - BS</td>
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Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? Yes

Proposed Core Foundational Component Area

Core Life/Physical Sci (KLPS)

Approved Foundational Component Area

Has/will this course be(en) submitted for Writing or
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus 20171010 PHYS 206-2 syllabus.pdf

Letters of support or other documentation No

Additional information Course will be required for many ENGR majors; College of Engineering will need to specify which majors.

Reviewer Comments Sandra Williams (sandra-williams) (10/12/17 8:15 pm): Rollback: Please update prerequisites and enforced prerequisites as discussed.

Sandra Williams (sandra-williams) (10/16/17 9:17 am): Moving forward with the following comments: could the title be changed to "Newtonian Mechanics for Engineering and Science"...it is implied that all courses are "for students." Syllabus shows "objectives" instead of "outcomes." It was my understanding course submitted for core could not have prerequisites.

Sandra Williams (sandra-williams) (10/16/17 9:20 am): Also, if a grade of C or better is required for the enforced prerequisites, then a statement needs to be added to the catalog prerequisites.

Melanie Moser (moserm) (10/31/17 3:31 pm): The form says the course has 3 hours of lecture and 1 hour of lab for a total of 4 credits. The syllabus says 3 hours of lecture and 1 hour of recitation for 3 credits. Will phys 218 be accepted as a substitute for students who change from one engineering program to another, since not all of them will be using this version of physics?

Sandra Williams (sandra-williams) (11/13/17 10:34 am): Updates made to form and received updated syllabus.

Sandra Williams (sandra-williams) (11/13/17 10:45 am): UCC approved in November.

Sandra Williams (sandra-williams) (11/14/17 8:20 am): Rollback: As requested.


Sandra Williams (sandra-williams) (12/04/17 4:11 pm): UCC approved in December.

Reported to state? Add
Course Information:
Course Title: Newtonian Mechanics for Engineering and Science
Course Number: PHYS 206 (THECB common course number: PHYS 2325)
Credit Hours: 3 SCH (3 lecture plus 1 recitation)
Term and Section: XX
Meeting times and location: XX
Pre-requisites: Grade of C or better for MATH 151 or MATH 171 or equivalent.

Instructor Information:
Instructor: XX
Telephone: XX
Email: XX
Office: XX
Office hours: XX

Course Description:
A calculus-based course on introductory Newtonian mechanics. This is the first semester of a two-semester sequence in introductory physics primarily intended for students pursuing degrees in STEM fields. By the end of the course students will understand, describe and apply the laws of physical motion to the solution of science and engineering problems.

Required Materials:

Homework (Mastering) All 206 sections use the ModifiedMastering on-line homework system.

Clicker Get the iClicker2 from your bookstore. The iClickers will be used for in-class conceptual testing and polling. To encourage class participation, credit for iClickers will be based in part on participation, as well as additional points based on correct answers.

Pre-Lectures (FlipItPhysics) All 206 sections use the http://www.flipitphysics.com on-line pre-lecture system (formerly known as SmartPhysics). You are required to view the prelectures (narrated slides including a few online questions) ahead of the lectures, and the lectures will include quizzes to see if you have gained a basic understanding. The remainder of the lecture will then focus more on problem-solving.

Grading Policies:
Exams: there will be 4 common evening exams (3 “midterm” exams and 1 “comprehensive” exam). Each of these will be given in the evenings as listed in the course schedule during the registration procedure: date1, date2, date3, date4. The midterm exams start at or around 7:30 PM, and are expected to last 1.5 hours. The comprehensive exam will last 2 hours. Exams generally consist of problems similar in content and difficulty to the recitations or homework, and they are expected to include both multiple-choice and free response questions. Students only need to bring
their TAMU ID, a pen/pencil and hand-held calculator. Any contestations regarding the grading of an exam must be brought to the instructor’s attention within 1 week of them being returned to the student.

**Absences:** If you miss an exam due to an *authorized excused absence* as outlined in the University Regulations, Student Rule 7: [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). Rule 7.1.6.2a is not acceptable. You should attempt to **contact the instructor prior to the exam but no later than the end of the week of the missed exam** to arrange for a way to make up the score. Instead of taking a make-up exam, the final cumulative exam grade will be based on a set of tested objectives in the other exams.

**Note:** Few conditions qualify as an authorized excused absence, so you must avoid missing exams except for extremely serious circumstances.

**Course Grade:** The final letter grade on the course is based upon the final numerical course score as detailed in the table below. The column on the left shows the minimum scores necessary to achieve the final letter grade shown in the right column.

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<td>B</td>
</tr>
<tr>
<td>≥ 65 %</td>
<td>C</td>
</tr>
<tr>
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<td>D</td>
</tr>
<tr>
<td>&lt; 50 %</td>
<td>F</td>
</tr>
</tbody>
</table>

The numerical score is computed as a weighted average over all different components of the course with the weights as determined in the table below. With the exception of the clicker quizzes all components of the course, such as tests/labs/recitation/homework/etc, are common across all sections of PHYS 206.

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (Three Midterms + Comprehensive one)</td>
<td>80%</td>
</tr>
<tr>
<td>Recitation</td>
<td>5%</td>
</tr>
<tr>
<td>Online homework</td>
<td>5%</td>
</tr>
<tr>
<td>Pre-lectures and Checkpoints</td>
<td>5%</td>
</tr>
<tr>
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<td>5%</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>100%</td>
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The “Exams” portion includes the three midterm exams as well as the comprehensive one. Exams are graded in terms of the learning objectives. This type of grading removes the multiple punishment that is associated with failing the same learning objective repeatedly across exams. The complete list of learning objectives that a student is supposed to master at the end of the semester is posted at [physics206.physics.tamu.edu/los.html](http://physics206.physics.tamu.edu/los.html)

Each exam tests several different learning objectives and could test many times the same learning objective. During the grading we keep track of every instance in which a learning objective is tested and whether in that particular instance the objective was marked as passed or failed. Learning objectives will also be tested multiple times across exams.
At the end of the semester we call achieved objectives as those who pass either one of the criteria below:

- were marked as passing $\geq 60\%$ of the tested times in the comprehensive exam.
- were marked as passing $\geq 60\%$ of the tested times in all exams in which they were tested, including the comprehensive one.

The number of achieved objectives at the end of the semester divided by the number of tested objectives gives the numerical grade in the “Exams” portion of the table above. As an example, if a student has achieved 60 objectives out of the total of 70 objectives tested, he/she has earned 86% of the Exams portion of the course grade.

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This course is composed of several pedagogical elements to enhance instruction through peer-learning and visual aids as described below:

- **Prelectures:** short online pre-lectures to expose the students to professionally designed videos explaining the basic concepts for the first time and gathering student- feedback on what might not be understood from them.
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- **Recitations:** carried in groups and led by a group of trained TA’s and teaching fellows. Teaching fellows are typically engineering students that have pass the course recently with excellent grades and provide a fundamental peer-learning component to this course.
- **Homework:** individual online homework assignments.

Students should plan for three hours of preparation per credit hour each week of the term.

**Student-Instructor Interaction:**
A website common to all sections of the course is the main source of general information. Grades and information specific to the sections will be held in eCampus. The lecture instructor, the TAs and Teaching Fellows will host office hours and Q&A sessions.

**Americans with Disabilities Act (ADA)**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Aggie Honor Code**
“An Aggie does not lie, cheat or steal, or tolerate those who do.” For additional information, please visit http://aggiehonor.tamu.edu.
Course Topics and Calendar of Activities:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction and math review</td>
</tr>
<tr>
<td>2.</td>
<td>Units, measurements and vectors</td>
</tr>
<tr>
<td>3.</td>
<td>Motion along a straight line</td>
</tr>
<tr>
<td>4.</td>
<td>Motion in 2 and 3 dimensions. <strong>Exam 1.</strong></td>
</tr>
<tr>
<td>5.</td>
<td>Newton's laws of motion</td>
</tr>
<tr>
<td>6.</td>
<td>Applying Newton's laws</td>
</tr>
<tr>
<td>7.</td>
<td>Work and kinetic energy</td>
</tr>
<tr>
<td>8.</td>
<td>Potential energy and energy conservation. <strong>Exam 2.</strong></td>
</tr>
<tr>
<td>9.</td>
<td>Centre of mass, momentum and collisions</td>
</tr>
<tr>
<td>10.</td>
<td>Rotation of rigid bodies, moments of inertia</td>
</tr>
<tr>
<td>11.</td>
<td>Torque and rotational dynamics</td>
</tr>
<tr>
<td>12.</td>
<td>Conservation of angular momentum, static equilibrium. <strong>Exam 3.</strong></td>
</tr>
<tr>
<td>13.</td>
<td>Gravitation, satellite motion and Kepler's laws</td>
</tr>
<tr>
<td>14.</td>
<td>Simple harmonic motion, pendula. <strong>Final.</strong></td>
</tr>
</tbody>
</table>

**Learning Outcomes:**

*Conceptual knowledge to gain:*

- Understanding of the physical laws of motion, static and dynamical Newtonian mechanics, and harmonic motion.
- To think more critically/scientifically, and develop the skills need to solve difficult multi-step problems.

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

- Be able to produce a mathematical description of movement in 1, 2, and 3 dimensions.
- Transform positions, velocities, and accelerations from one coordinate system to another system in relative motion with respect to the first one.
- Identify a basic set of forces, their origin, and their points of application in specific problems.
- Identify and isolate bodies and pictorially represent the direction and location of forces acting on the bodies.
- Compute the position of the center of mass and moment of inertia for different basic shapes in simple conditions.
- Application of the Laws of Newton to quantitative predict linear and rotational movement.
- Application of conservation laws to quantitative describe linear and rotational movement.
- Computation of forces in problems of statics.
- Identification of systems undergoing Simple Harmonic Motion, description of that movement and computation of their frequencies of oscillation.
Course Change Request

New Course Proposal

Date Submitted: 11/15/17 10:13 am

Viewing: PHYS 207: Electricity and Magnetism for Engineering and Science

Last edit: 11/16/17 8:36 pm

Changes proposed by: hwalker

Programs referencing this course
- BS-BAEN: Biological and Agricultural Engineering - BS
- BS-PETE: Petroleum Engineering - BS
- BS-AERO: Aerospace Engineering - BS
- BS-BMEN: Biomedical Engineering - BS
- BS-CVEN: Civil Engineering - BS
- BS-CPSC: Computer Science - BS
- BS-ELEN: Electrical Engineering - BS
- BS-ESET: Electronic Systems Engineering Technology - BS

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heather Walker</td>
<td><a href="mailto:hwalker@tamu.edu">hwalker@tamu.edu</a></td>
<td>9798621653</td>
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</table>

Course prefix
- PHYS

Course number
- 207

Department
- Physics and Astronomy

College/School
- Science

Academic Level
- Undergraduate

Undergraduate course level justification (Select One)
- Prerequisites

Prerequisites
- All prerequisites will be enforced through COMPASS.

Academic Level (alternate)
- Graduate

Effective term
- 2018-2019

Complete Course Title
- Electricity and Magnetism for Engineering and Science

Abbreviated Course Title
- ELEC & MAGNETISM ENGR & SCI

Catalog course description
- Calculus-based electricity and magnetism; electromagnetic phenomena; basic laws of electricity and magnetism; science and engineering problems involving charges, electromagnetic fields, and electrical circuits.

Prerequisites and Restrictions
- Grade of C or better in PHYS 206; grade of C or better in MATH 152 or MATH 172 or equivalent.

Concurrent Enrollment
- No

Should catalog prerequisites / concurrent enrollment be enforced?
- Yes

Approval Path

1. 11/15/17 2:20 pm
   Lewis Ford (a-ford): Approved for PHYS Department Head

2. 11/16/17 8:36 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review

3. 11/17/17 9:26 am
   Sara Thippin (sarathippin): Approved for SC Committee Preparer UG

4. 11/17/17 10:02 am
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<td>And</td>
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<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>Or</td>
<td>MATH 152</td>
<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
<tr>
<td>Or</td>
<td>MATH 172</td>
<td>C</td>
<td>UG</td>
<td>No</td>
</tr>
</tbody>
</table>

Crosslistings: No

Semester: 3
Credit Hour(s): Contact Hour(s) (per week):
Lecture: 3
Lab: 0
Other: 0
Total: 3

Repeatable for credit: No
Three-peat: No
CIP/Fund Code: 4008010002
Default Grade Mode: Letter Grade (G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No

Is 100% of this course going to be taught in Texas? Yes

Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

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</table>

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? Yes

Proposed Core Foundational Component Area: Core Life/Physical Sci (KLP5)

Approved Foundational Component Area:
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: 20171010 PHYS 207-2 syllabus.pdf

Letters of support or other documentation: No

Additional information: Course will be required for many ENGR majors; College of Engineering will need to specify which majors.

Reviewer Comments:
- Lewis Ford (a-ford) [10/13/17 8:07 am]: Rollback: needs editing
- Sandra Williams (sandra-williams) [10/16/17 9:21 am]: Rollback: if you require a grade of C or better in your enforced prerequisites, include a statement in the catalog prerequisites.
- Sandra Williams (sandra-williams) [10/16/17 4:49 pm]: Moving forward with the following comments: could the title be changed to "Electricity and Magnetism for Engineering and Science" ...it is implied that all courses are "for students." Syllabus shows "objectives" instead of "outcomes." Also, it was my understanding courses submitted for core curriculum could not have prerequisites.
- Sandra Williams (sandra-williams) [11/13/17 10:37 am]: Updates made to form and received updated syllabus.
- Sandra Williams (sandra-williams) [11/13/17 10:46 am]: UCC approved in November.
- Sandra Williams (sandra-williams) [11/14/17 8:20 am]: Rollback: As requested.
- Sandra Williams (sandra-williams) [11/15/17 9:34 am]: Rollback: As requested.
- Sandra Williams (sandra-williams) [12/04/17 4:11 pm]: UCC approved in December.

Reported to state: Add
Course Information:
Course Title: Electricity and Magnetism for Engineering and Science
Course Number: PHYS 207 (THECB common course number: PHYS 2326)
Credit Hours: 3 SCH (3 lecture plus 1 recitation)
Term and Section: XX
Meeting times and location: XX
Pre-requisites: Grade of C or better for PHYS 206; and MATH 152 or MATH 172 or equivalent.

Instructor Information:
Instructor: XX
Telephone: XX
Email: XX
Office: XX
Office hours: XX

Course Description:
A calculus-based course on electricity and magnetism. This is the second semester of a two-semester sequence in introductory physics for students pursuing degrees in STEM fields. By the end of the course students will have developed a basic understanding of electromagnetic phenomena, learned the basic laws of electricity and magnetism, and developed the ability to solve science and engineering problems that involve charges, electromagnetic fields and electrical circuits.

Required Materials:

|---------------------|---------------------------------------------------------------------------------------------------------------------------------
| Homework (Mastering)| All 207 sections use the ModifiedMastering on-line homework system.                                                                 |
| Clicker             | Get the iClicker2 from your bookstore. The iClickers will be used for in-class conceptual testing and polling. To encourage class participation, credit for iClickers will be based in part on participation, as well as additional points based on correct answers. |
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- **Homework:** individual online homework assignments.

Students should plan for three hours of preparation per credit hour each week of the term.

**Student-Instructor Interaction**
A website common to all sections of the course is the main source of general information. Grades and information specific to the sections will be held in eCampus. The lecture instructor, the TAs and Teaching Fellows will host office hours and Q&A sessions.

**Americans with Disabilities Act (ADA)**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Aggie Honor Code**
“An Aggie does not lie, cheat or steal, or tolerate those who do.” For additional information, please visit http://aggiehonor.tamu.edu.
Course Topics and Calendar of Activities:

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Electric Charge and Electric Field: Electric charge, Coulomb’s law</td>
</tr>
<tr>
<td>2.</td>
<td>Electric Charge and Electric Field: Electric Field, Electric Dipoles</td>
</tr>
<tr>
<td>3.</td>
<td>Gauss’ Law: Electric flux, Gauss’s law, Applications of Gauss’s Law</td>
</tr>
<tr>
<td>5.</td>
<td>Capacitance and Dielectrics: Capacitors and Capacitance, Capacitors in Series and in Parallel, Energy storage in capacitors, Electric Field energy, Dielectrics, Gauss’s Law in Dielectrics</td>
</tr>
<tr>
<td>6.</td>
<td>Currents, Resistance, and Electromotive Force: Current, Resistivity, Resistance, EMF, Intro to circuits, energy and power in circuits</td>
</tr>
<tr>
<td>7.</td>
<td>DC Circuits: Resistors in series and in parallel, Kirchhoff’s Rules, RC-circuits, Power distribution systems</td>
</tr>
<tr>
<td>8.</td>
<td>Magnetic Fields and Magnetic Forces: Magnetic Field, Magnetic Field lines and magnetic flux, Motion of Charged Particles in a Magnetic Field and Applications, Current-carrying conductor in a magnetic field, Forces and torques on a current loop in mag. field, motors, Hall effect. <strong>Exam 2.</strong></td>
</tr>
<tr>
<td>9.</td>
<td>Sources of Magnetic Field: M-field of moving charge, M-field of current element, M-field of straight current-carrying conductor, forces between parallel conductors, M-field of a circular current loop, Ampere’s law and applications</td>
</tr>
<tr>
<td>10.</td>
<td>Electromagnetic Induction: Faraday’s law, Lenz’s law, Motional EMF, Induced Electric field, Eddy currents, Displacement current and to Maxwell’s Equations</td>
</tr>
<tr>
<td>11.</td>
<td>Inductance: Mutual Inductance, self-inductance and inductors, magnetic field energy, RL circuit, LC circuit, LRC circuit</td>
</tr>
<tr>
<td>12.</td>
<td>Alternating Current: Phasors and AC, Reactance, LRC circuit with AC source and impedance, power in AC circuits, resonance in AC, transformers. <strong>Exam 3.</strong></td>
</tr>
<tr>
<td>14.</td>
<td>Special topics: standing EM waves, EM waves modulation in telecom., propagation of light, refraction, reflection, Snell’s law, Review. <strong>Final.</strong></td>
</tr>
</tbody>
</table>

**Detailed Learning Outcomes:**

**Mathematical Tools to Solve E&M Problems**

- Be able to compute the components of a vector in any given coordinate system
- Be able to compute addition, scalar, and vector products between vectors
- Be able to solve for an unknown quantity in a single equation when possible
- Be able to solve a system of N equations with N unknown variables
- Be able to translate verbal constraints into mathematical language
- Be able to translate mathematical results to verbal interpretations
- Be able to do integrals and take derivatives
Electric Charge and Coulomb’s Law
- Calculate the electric force between charges using Coulomb’s Law
- Calculate the Coulomb force exerted on a charged particle by other charged particles, using Coulomb’s Law and Superposition
- Calculate the electric field produced by a point charge
- Calculate the electric field due to a collection of point charges and understand the distinction between electric force and electric field
- Calculate the electric field caused by a continuous distribution of charge
- Be able to interpret electric field lines
- Calculate the force and torque on an electric dipole due to an external electric field, and the potential energy of an electric dipole
- Gauss’ Law
- Articulate the concept of electric flux and be able to calculate the electric flux through a surface
- Formulate how Gauss’ Law relates the electric flux through a closed surface to the charge enclosed by the surface
- Articulate under what conditions Gauss’ Law is useful for determining electric field
- Be able to use Gauss’ Law to calculate the electric field due to a symmetric charge distribution
- Describe the electric field within a conductor and where the charge is located on a charged conductor.

Electric Potential
- Calculate the electric potential energy of a collection of charges
- Use conservation of energy to solve a problem with electric forces
- Articulate the meaning and significance of electric potential
- Calculate the electric potential that a collection of charges produces at a point in space
- Calculate the electric potential due to a continuous distribution of charges
- Be able to use electric potential to calculate electric field
- Be able to calculate the electric potential from the electric field
- Capacitance and Dielectrics
- Identify the nature of capacitors and be able to quantify their ability to store charge (i.e. the capacitance)
- Be able to combine the calculation of fields and potential functions to derive the capacitance of the three soluble systems
- Analyze capacitors connected in a network (by determining equivalent capacitance for capacitors connected in series or parallel)
- Calculate the amount of energy stored in a capacitor
- Articulate how dielectrics make capacitors more effective (and how a dielectric within a charged capacitor becomes polarized)
- Be able to apply Gauss’ Law when dielectrics are present

Current, Resistance, and Electromotive Force
- Calculate the resistance of a conductor from its dimensions and resistivity
- Articulate Ohm’s Law both in terms of the resistivity of a material (the microscopic form of Ohm’s Law) and in terms of the resistance (macroscopic form of Ohm’s Law)
• Articulate the concept of electromotive force (emf) and how emf makes it possible for current to flow in a circuit
• Identify the symbols used in circuit diagrams
• Calculate energy and power in a circuit

**Direct-Current Circuits**
• Analyze circuits with multiple resistors in series or parallel
• Articulate Kirchhoff’s Rules
• Apply Kirchhoff’s rules to analyze circuits
• Articulate the functionality of ammeters and voltmeters and under what conditions these instruments are “idealized”
• Analyze R-C Circuits

**Magnetic Field and Magnetic Forces**
• Articulate the force exerted by a magnetic field on other moving charges or currents
• Interpret magnetic field lines and calculate magnetic flux through a surface
• Calculate the motion of charged particles in magnetic and electric fields
• Calculate the magnetic force on a current-carrying wire
• Calculate the torque on a magnetic dipole and the potential energy of a magnetic dipole in an external magnetic field
• **Sources of Magnetic Field**
• Calculate the magnetic field due to a point charge with constant velocity
• Calculate the magnetic field due to a current (using Biot-Savart Law)
• Calculate the force between two long parallel conductors
• Apply Ampere’s Law to calculate the magnetic field
• Recognize under what conditions Ampere’s Law is useful to determine the magnetic field

**Electromagnetic Induction**
• Be able to calculate magnetic flux through a surface
• Articulate how Faraday’s Law relates the induced emf in a loop to the time-derivative of magnetic flux through the loop and be able to apply it to calculate induced emf
• Apply Lenz’s Law to determine the direction of an induced emf
• Calculate the emf induced in a conductor moving through a magnetic field
• Calculate the induced electric field generated by a changing magnetic flux
• Articulate the concept of displacement current and be able to calculate it for a changing electric flux through a surface

**Inductance**
• Calculate mutual inductance and induced emf due to mutual inductance
• Articulate the concept of self-inductance and be able to relate the magnetic flux and current to the self-inductance
• Calculate the energy stored in a magnetic field
• Analyze R-L circuits and describe the time-dependence of the current
• Analyze L-C circuits and describe the time-dependence of the current
• Recognize the time-dependence of the current in an L-R-C circuit

**Alternating-Current Circuits**
• Analyze an L-R-C series circuit with a sinusoidal emf
• Understand the origin of resonances in L-R-C circuits (analogous to forced, damped harmonic oscillator)
• Determine the amount of power flowing into or out of the alternating-current circuit

**Electromagnetic Waves**
• Articulate the key properties of electromagnetic waves (wave is transverse, relationship between E and B, speed of wave)
• Be able to reproduce the wave equation mathematically and articulate the meaning of all quantities in the mathematical formulation of sinusoidal electromagnetic plane wave.
• Use the Poynting vector to calculate the energy and momentum carried by the electromagnetic wave
Course Change Request

**New Course Proposal**

Date Submitted: 11/03/17 11:01 am

Viewing: **RPTS 324 : Event Management Final Assessment**

Last edit: 11/12/17 10:13 pm

Changes proposed by: susan-g-scott

Programs referencing this course:
- **CERT-CU45: Professional Event Manager - Certificate**

Faculty Senate Number

<table>
<thead>
<tr>
<th>Contact(s)</th>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Susan Scott</td>
<td><a href="mailto:susan-g-scott@tamu.edu">susan-g-scott@tamu.edu</a></td>
<td>979-845-5350</td>
</tr>
</tbody>
</table>

Course prefix: RPTS  
Course number: 324

Department: Recreation, Park & Tourism Sc
College/School: Agriculture & Life Sciences
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
- Prerequisites

All prerequisites will be enforced through COMPASS.

Effective term: 2018-2019

Complete Course Title: Event Management Final Assessment

Abbreviated Course Title: EVENT MGT FINAL ASSESSMENT

Catalog course description:
- Demonstration of academic knowledge in management of events; document event coordination experience through completion of volunteer work and a website portfolio.

Prerequisites and Restrictions:
- Enrollment in Professional Event Manager certificate; grade of C or better in RPTS 311 and RPTS 320; grade of C or better in RPTS 321 or concurrent enrollment.

Concurrent Enrollment: No

Should catalog prerequisites / concurrent enrollment be enforced?: Yes

https://nextcatalog.tamu.edu/courseleaf/approve#
### Enforced Prerequisites / Concurrent Enrollment

| And/Or | Course Prefix/Number | Min Grade/Score | Academic Level | | Concurrency? |
|--------|----------------------|-----------------|----------------|-----------------|
| And    | RPTS 311             | C               | UG             | No              |
| And    | RPTS 320             | C               | UG             | No              |
| And    | RPTS 321             | C               | UG             | Yes             |

**Crosslistings:** No  
**Stacked with:**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit Hour(s)</th>
<th>Contact Hour(s) (per week):</th>
<th>Lecture:</th>
<th>Lab:</th>
<th>Other:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Repeatable for credit?** No  
**Three-peat?** No  
**CIP/Fund Code** 3103010018  
**Default Grade Mode** Satisfactory/Unsatisfactory(S)

### Alternate Grade Modes

**Method of instruction** Independent Study

**Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)** Yes

### Learning Outcomes

Meets traditional face-to-face learning outcomes.

**Describe how learning outcomes are met or provide justification why they are not met.** Learning outcomes for all formats of this course are identical.

### Hours

Does not meet traditional face-to-face hours.

**Describe how hours are met or provide justification why they are not met.** This zero credit course involves meetings with the instructor by appointment, plus independent work.

**Will this course be taught as a distance education course?** Yes

**I verify that I have reviewed the FAQ for Export Control Basics for Distance Education.** Yes

**Is 100% of this course going to be taught in Texas?** Yes

**Will classroom space be needed for this course?** No

**This will be a required course or an elective course for the following programs:**

<table>
<thead>
<tr>
<th>Required (select program)</th>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(CERT-CU45) Professional Event Manager - Certificate</td>
</tr>
</tbody>
</table>
Course Syllabus

Syllabus: Upload syllabus
Upload syllabus: RPTS 324 Syllabus_Rev11-3-17.docx

Letters of support or other documentation: No

Additional information:

Reviewer Comments:
- Sandra Williams [sandra-williams] [10/20/17 11:27 am]: Rollback: If you require a grade of C or better in your enforced prerequisites, include a statement in the catalog prerequisites. Also, are RPTS 321 and RPTS 324 prerequisites that can be satisfied by previously being taken or could be taken concurrently? If so, then they too need to be listed in the enforced prerequisite table.
- Sandra Williams [sandra-williams] [10/26/17 10:47 am]: Update received.
- Dawn Kerstetter [dkerstetter] [11/01/17 10:32 am]: S/U grade--need A-F grading scale?
- Bob Knight [bob-knight] [11/02/17 5:48 pm]: Rollback: The prerequisites in the syllabus under prerequisites and enrollment do not match the form. No due dates listed.
- Dawn Kerstetter [dkerstetter] [11/03/17 8:06 am]: Rollback: See Dr. Knight's comment.
- Sandra Williams [sandra-williams] [12/04/17 3:57 pm]: UCC approved in December.

Reported to state?: Add
Department of Recreation, Park and Tourism Sciences

RPTS 324: Event Management Final Assessment
Fall 2018
Online

Instructor: Melyssa-Anne Stricklin, M.S.
Phone: 979-458-8515
Email: melyssa.stricklin@tamu.edu
Office: AGLS 463
Office Hours: By Appointment

Credits: Zero

Prerequisites: RPTS 311, RPTS 320 and RPTS 321 (may be taken concurrently with RPTS 321)

Enrollment: Restricted to students accepted to and participating in the Professional Event Manger Certificate program within the Department of Recreation, Park and Tourism Sciences.

Course Description

Demonstrate academic knowledge in management of events; document event coordination experience through completion of volunteer work and a website portfolio.

Learning Outcomes

1. Students will be able to demonstrate their knowledge of event management course materials by passing the comprehensive certificate exam with a 70% or higher.
2. Students will create a website portfolio representing their scope of event management skills.
3. Students will document a minimum of 40 hours of volunteer participation in event management.

Textbook and/or Resource Material

No textbook is required.

Grading Scale

To receive full credit for an assignment, it must be submitted on time, follow the appropriate format, and demonstrate the student’s best effort.

The student will receive an “S” (Satisfactory) if all requirements are met. If all requirements are not met, the student will receive an “U” (Unsatisfactory).
Attendance and Make-up Policies

This course does not have a regularly scheduled meeting time. Assignments are to be submitted on time. Late work will not be accepted without documentation of a university-excused absence. See student rule 7 http://student-rules.tamu.edu/rule07 for details.

Assignments

Volunteer Requirements

• A minimum of 40 hours (unpaid) of service in the conduct of event management an execution.
  o A least 10 events, volunteering at least 3 hours per event
  o No community service events
• These hours will be performed after the student is admitted to the Professional Event Manager Certificate program.
• Service hour requirements from RPTS 311, RPTS 320, and RPTS 321 may apply.

Portfolio Requirements

It is important to document the experience that you have gained, the hours worked or service given to planning and conducting events, and the knowledge you have gained from those experiences.

• Your portfolio must be a creative website (Wix, Weebly, etc.)
  o Resume
  o Event Verification Form (per event)
  o For each event volunteer experience, document specifically what you did to contribute to the success of the event using action verbs
  o For each event volunteer experience, write a brief reflection
    ▪ What did you learn from your experience?
    ▪ What was the purpose of the event?
  o Document your participation (per event)
    ▪ Photos of you actively working the event; no selfies
    ▪ Photos of the event that include a variety of event elements
  o Did you help plan aspects of the event? If so,
    ▪ Include a written copy of the plan and any supporting materials

Exit Exam

Students must pass the exit exam prior to gaining the certificate. The exam will be based on RPTS 311, RPTS 320, and RPTS 321.
## Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Due Date</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/30</td>
<td>Work with your Advisor to confirm requirements.</td>
</tr>
<tr>
<td>2</td>
<td>9/6</td>
<td>Begin outlining your portfolio, consult with advisor as needed.</td>
</tr>
<tr>
<td>3</td>
<td>9/13</td>
<td>Open account with website generator and begin building your portfolio.</td>
</tr>
<tr>
<td>4</td>
<td>9/20</td>
<td>Schedule final event volunteer work.</td>
</tr>
<tr>
<td>5</td>
<td>9/27</td>
<td>Volunteer at any events required of you.</td>
</tr>
<tr>
<td>6</td>
<td>10/4</td>
<td>Continue your portfolio making adjustments as needed.</td>
</tr>
<tr>
<td>7</td>
<td>10/11</td>
<td>Meeting Advisor to confirm your portfolio is on the right track. Make adjustments as needed.</td>
</tr>
<tr>
<td>8</td>
<td>10/18</td>
<td>Review material from RPTS 311, especially Comprehensive Program Plan</td>
</tr>
<tr>
<td>9</td>
<td>10/25</td>
<td>Review material from RPTS 320 and RPTS 321</td>
</tr>
<tr>
<td>10</td>
<td>11/1</td>
<td>Finalize portfolio. Take exit exam and submit portfolio.</td>
</tr>
<tr>
<td>11</td>
<td>11/8</td>
<td>Advisor will confirm all requirements have been met. Complete program evaluation.</td>
</tr>
<tr>
<td>12</td>
<td></td>
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<tr>
<td>13</td>
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<tr>
<td>15</td>
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</tr>
</tbody>
</table>

*All 15 hours of instruction will be met by week 11.*

### Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

### Academic Integrity

“An Aggie does not lie, cheat, or steal, or tolerate those who do.” For additional information please visit: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)
Course Change Request

New Course Proposal

Date Submitted: 11/16/17 9:33 am

Viewing: URPN 409 : Urban Design Studio

Last edit: 11/17/17 2:57 pm

Changes proposed by: jrichards3

Programs referencing this course

MINOR-UDPI: Urban Design in the Public Interest - Minor

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galen Newman</td>
<td><a href="mailto:gnewman@tamu.edu">gnewman@tamu.edu</a></td>
<td>9798624320</td>
</tr>
</tbody>
</table>

Course prefix   URPN
Department       Land Arch & Urban Planning
College/School   Architecture
Academic Level   Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Effective term    2018-2019

Complete Course Title
Urban Design Studio

Abbreviated Course Title
URBAN DESIGN STUDIO

Catalog course description
Design studio focused on urban design as a human-centered participatory practice; consideration of a project derived through community engagement; interdisciplinary service learning combining methodologies of architecture, landscape architecture and urban design.

Prerequisites and Restrictions
Junior or senior classification; admission to upper level in BED or URPN-BS; URPN 220, URPN 320, URPN 325, URPN 483, concurrent enrollment in URPN 419.

Concurrent Enrollment  Yes
Concurrent Enrollment URPN 419

Should catalog prerequisites / concurrent enrollment be enforced? Yes

Approval Path
1. 11/16/17 9:37 am
   Galen Newman (gnewman): Approved for LAUP Department Comm Chair
2. 11/16/17 9:42 am
   Shannon VanZandt (svanzandt): Approved for LAUP Department Head
3. 11/16/17 2:52 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
4. 11/17/17 9:06 am
   Ann Broussard (ambroussard): Approved for AR Committee Preparer
5. 11/17/17 2:58 pm
   Leslie Feigenbaum (lfeigenbaum): Approved for AR Committee Chair
6. 11/17/17 2:58 pm
   Leslie Feigenbaum (lfeigenbaum): Approved for AR College Dean
7. 11/19/17 9:51 am
   Sandra Williams (sandra-williams): Approved for UCC Preparer
8. 12/04/17 3:58 pm
   Sandra Williams

https://nextcatalog.tamu.edu/courseleaf/approve#
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
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<th>Concurrency?</th>
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<tbody>
<tr>
<td>And</td>
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<tr>
<td>And</td>
<td>URPN 320</td>
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</tr>
<tr>
<td>And</td>
<td>URPN 325</td>
<td>C</td>
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<tr>
<td>And</td>
<td>URPN 483</td>
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<td>And</td>
<td>URPN 326</td>
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<tr>
<td>And</td>
<td>URPN 419</td>
<td>D</td>
<td>UG</td>
<td>)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Crosslistings: No

Stacked: No

Semester: 5
Credit Hour(s): Contact Hour(s) (per week): Lecture: 2, Lab: 9, Other: 0, Total: 11
Repeatable for credit: No
CIP/Fund Code: 0403010006
Default Grade Mode: Letter Grade(G)
Method of instruction: Lecture and Laboratory
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No
Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

Required (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-URPN) Urban and Regional Planning - BS</td>
</tr>
</tbody>
</table>

Elective (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-URPN) Urban and Regional Planning - BS</td>
</tr>
</tbody>
</table>

Has/will this course be(en) submitted for core curriculum consideration? No
Has/will this course be(en) submitted for Writing or Communication consideration? Yes

Has/will this course be(en) submitted for ICD consideration? No

Course Syllabus

Syllabus: Upload syllabus

Upload syllabus

URPN 409_Syll_REvised.pdf

Letters of support or other documentation No

Additional information

Reviewer Comments
Shannon VanZandt (svanzandt) (10/30/17 3:44 pm): Rollback: update learning outcomes
Sandra Williams (sandra-williams) (11/01/17 12:46 pm): Rollback: If you require a grade of B or better in your enforced prerequisites (table), you must include a statement in the catalog prerequisites.
Shannon VanZandt (svanzandt) (11/02/17 8:56 am): Rollback: edits
Sandra Williams (sandra-williams) (11/12/17 6:47 pm): Rollback: Are the enforced prerequisites in the table “AND” or “OR” - are each required?
Sandra Williams (sandra-williams) (11/15/17 9:59 pm): Rollback: I am confused with "URPN 326 or equivalent GIS-based course approved by the BS-URPN coordinator" - it is listed in the catalog prerequisites and syllabus but not in the enforced prerequisite table.
Sandra Williams (sandra-williams) (11/16/17 2:52 pm): Moving forward.
Sandra Williams (sandra-williams) (11/16/17 4:00 pm): Moving forward as requested.
Sandra Williams (sandra-williams) (12/04/17 3:58 pm): UCC approved in December.

Key: 18340

https://nextcatalog.tamu.edu/courseleaf/approve/
Course Number and Title: URPN 409 Urban Design Studio

Term: Spring 2019

Location and Time: TBD

Course Description and Prerequisites

URPN 409 Urban Design Studio (2-9). Credit 5. A design studio focused on urban design as a human-centered participatory practice; consideration of a project derived through community engagement; interdisciplinary service learning combining methodologies of architecture, landscape architecture and urban design.

Prerequisites: Junior or senior classification; admission to upper level in environmental design; URPN 220, URPN 320, URPN 325, and the URPN 483 Studio.

5.00 Credit hours
2.000 Lecture hours
9.000 Lab hours

Introduction

This is the capstone course of the undergraduate minor Urban Planning. It is the culmination of the coursework that the BS-URPN student has undertaken both within his or her major. It is to URPN students interested in design and have the pre-qualifications. Students and faculty will carry out design activities serving a target urban community through a service-based project, a participatory vehicle for faculty and students to work with urban communities that traditionally do not have access to high-quality design solutions. Studio curriculum is modeled on the interdisciplinary, team-based design practice that students will later use as design professionals. The studio can find its theoretical orientation for design in the three-credit ARCH 413 Elements of Urban Design.

The studio adopts the mission statement of SEED (Social Economic Environmental Design Network), which is “To advance the right of every person to live in a socially, economically, and environmentally healthy community,” and follows its five guiding principles:

1. Advocate with those who have a limited voice in public life
2. Build structures for inclusion that engage stakeholders and allow communities to make decisions
3. Promote social equality through discourse that reflects a range of values and social identities
4. Generate ideas that grow from place and build local capacity
5. Design to help conserve resources and minimize waste

Following the paradigm of PID, as well as the Landscape Urbanism Movement emergent in the 1990’s, the studio advocates for social justice and diversity, while addressing the inherent complexity of contemporary urban conditions on multiple, intersecting levels and scales (social, political, environmental, economic, cultural and geographic), in order to yield thoughtful and innovative designs in the public interest.

Student Learning Outcomes

Following the completion of the course, the student will have gained skill and expertise to be able to:

1. Conduct research, including data collection, analysis, design problem definition.
   - Compile and analyze relevant census, built environment, and geological data using GIS mapping techniques and graphic design.
• Compile and analyze data and information gathered from community outreach.
• Generate site documentation.
• Generate program goals, functional needs, phasing, planning guidelines, and policy.
• Apply operative mapping analysis in the formulation of design solutions.

2. Create a Design Solution
• Produce a design using interdisciplinary methodology derived from landscape design, architectural design, and urban design, as adapted in combination to address the defined problem.
• Apply urban acupuncture to yield a leveraged, high impact intervention.
• Work at different scales (city, neighborhood, street, building), as dictated by the defined problem.

3. Apply Interdisciplinary Design Practice
• Execute effective design collaboration between team members from allied disciplines.
• Implement team building and partnering in the design process.

Instructor Information

Instructor: Galen Newman, PhD, ASLA, APA
Email: gnewman@arch.tamu.edu
Office Hours: MW 10:00am – 12:00pm
Office Location: Scoates 103

Textbooks, Reference Material, Software, Design Materials

• A laptop loaded with software appropriate for the development and presentation of the preliminary research and final project must be brought to each session. ArcGIS and the Adobe creative suite (including Illustrator, InDesign, and Photoshop) are mandatory. The student may use whatever project design software he or she prefers (AutoCad, ArchiCad, Revit, etc.).
• Design materials to be purchased:
  • One 5 x 8.25 Moleskine Art Plus Large Sketchbook for use as a design journal
  • One sketch paper roll, 12" width, 50 yds
  • Site model materials: basswood, chipboard, poplar etc (expenses to be shared within the class)

Texts to be discussed in periodic seminars to take place during the lecture hours:
• Alan Berger, Drosscape: Wasting Land in Urban America (New York: Princeton Architectural Press, 2006)

Grading Policies

A = 89.5-100; B = 79.5-89.4; C = 69.5-79.4; D = 59.5-69.4; F = <59.4

The final grade (100 attainable points) is comprised of preliminary research (30), final project (60), and participation (10). A progress grade will be indicated following the mid-semester juried presentation. Each element of the final presentation will be assessed according to quality of design development, completeness of required content, and clarity of communication. The instructor will specify the final presentation drawing standards, layout, line weights, and other graphic conventions. The urban design project will be described, and its requirements specified, in a brief handed out in class. This project will be undertaken in teams, except with the instructor’s permission.
Writing and Design Assignments*

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRELIMINARY RESEARCH</td>
<td>30%</td>
</tr>
<tr>
<td>INDIVIDUAL WRITING ASSIGNMENTS</td>
<td>22%</td>
</tr>
<tr>
<td>Individual Review Report</td>
<td>3.5%</td>
</tr>
<tr>
<td>Individual Executive Summary</td>
<td>3.5%</td>
</tr>
<tr>
<td>Individual Case Study Report</td>
<td>5%</td>
</tr>
<tr>
<td>Individual Project Subject Paper</td>
<td>10%</td>
</tr>
<tr>
<td>FINAL PROJECT</td>
<td>30%</td>
</tr>
<tr>
<td>GROUP FINAL REPORT</td>
<td>8%</td>
</tr>
<tr>
<td>PARTICIPATION</td>
<td>10%</td>
</tr>
</tbody>
</table>

*each paper will build upon itself and be included within the final report as edits and critiques are made

To pass this course you must pass the Writing component.

Final Deliverables

Prior to the first day of reviews, all material produced in the class, including preliminary research, reports, and final presentation sheets, are to be submitted as .pdf files, reduced in Illustrator to fit on the given 8 ½ x 11” layout grid, and as color prints.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Introduction. Team Building and Partnering. Preliminary research started: data gathering (census, built environment, and geological data using GIS mapping techniques)</td>
</tr>
<tr>
<td>2</td>
<td>Preliminary research: data gathering</td>
</tr>
<tr>
<td>3</td>
<td>Preliminary research: data compilation, problem definition, preliminary report started</td>
</tr>
<tr>
<td>4</td>
<td>Preliminary research: report produced and presented in formal review</td>
</tr>
<tr>
<td>5</td>
<td>Final project: schematic design started, preliminary report revised as required</td>
</tr>
<tr>
<td>6</td>
<td>Final project: schematic design, final report submitted</td>
</tr>
<tr>
<td>7</td>
<td>Final project: schematic design reviewed, developed design started</td>
</tr>
<tr>
<td>8</td>
<td>Final Project: developed design, desk critiques</td>
</tr>
<tr>
<td>9</td>
<td>Final Project: developed design, desk critiques, mock-up presentation reviewed</td>
</tr>
<tr>
<td>10</td>
<td>Final Project: production, desk critiques</td>
</tr>
<tr>
<td>11</td>
<td>Final Project: production, desk critiques, on-board review</td>
</tr>
<tr>
<td>12</td>
<td>Final Project: production, desk critiques, mock-up presentation reviewed</td>
</tr>
<tr>
<td>13</td>
<td>Final Project: production, desk critiques</td>
</tr>
<tr>
<td>14</td>
<td>Final Presentation</td>
</tr>
</tbody>
</table>

Writing Assignments

Review
Write a 500-word review of the Belmont Report and the Human Subjects research approval process.
Provide a list of references, if you use any.

Executive Summary
Write a 500-word Executive Summary of an assigned reading on Ethics for Practicing Planners. This exercise is important because planners must produce Executive Summaries of many technical reports and plans. Provide a list of references.

Case Study Report
Using the studio topic, develop a case study on a similar planning project. Document the case with newspaper reports or scholarly journal articles and write a 500-word paper. Provide a list of references.

Project Subject Paper
For this assignment, students will write a 1,250-word essay on current theory and practice in neighborhood planning. Provide a list of references.

Final Project Report
This is a group effort, detailing the methods and results of the project. This is an important exercise because much of the work in planning departments consists of group projects and reports. The final Project Report will be at least 5,000 words long.

Other Pertinent Course Information

Working Outside Class Time Expected:
The successful student must commit to at least three hours of study outside class time for each hour of scheduled class time. This will yield a total 32 hours each week, in and out of class. Interim submittals will be required every week in order to alleviate the inevitable end of term time crunch. Working the full 36 hours per week on the project will reduce the amount of time needed to prepare the final submission at the end of the semester because various components will have been already been completed and discussed.

Time Management:
At the start of the semester, the successful student will complete a work schedule, incorporating all of his or her classes and other obligations, and stick with it as much as possible.

Academic Integrity
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: http://aggiehonor.tamu.edu

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Care of Facilities

Please respect your facilities in the College of Architecture (studio space, photo lab, shop, labs).

The use of spray paint, spray adhesive or other surface-altering materials is not permitted in the Langford Complex, except in designated zones (we do have a spray booth facilities located on our complex). Students who violate this rule will be liable for the expenses associated with repairing damaged building finishes and surfaces.

Throughout the semester and at the end of the semester, your area must be clean of all trash. You are responsible for cleaning your studio, desk and locker at the end of each semester.

No power tools may be used in the design studio. No dust or odor producing processes may be conducted in the studio. No wet casting processes may be conducted in the studio. The college shop and spray booth facilities must be used for the above-mentioned processes. Professional behavior and conduct is expected of each student.

All studio desks must be covered. In addition students must have at minimum an 18” x 24” cutting mat at their desk.

Studio Policy

All students, faculty, administration and staff of the Department of Landscape Architecture and Urban Planning at Texas A&M University are dedicated to the principle that the Design Studio can be a central component of an effective education in architecture. They are equally dedicated to the belief that students and faculty must lead balanced lives and use time wisely, including time outside the design studio, to gain from all aspects of a university education and world experiences. They also believe that design is the integration of many parts, that process is as important as product, and that the act of design and of professional practice is inherently interdisciplinary, requiring active and respectful collaboration with others.

Students and faculty in every design studio will embody the fundamental values of optimism, respect, sharing, engagement, and innovation. Every design studio will therefore encourage the rigorous exploration of ideas, diverse viewpoints, and the integration of all aspects of architecture (practical, theoretical, scientific, spiritual, and artistic), by providing a safe and supportive environment for thoughtful innovation. Every design studio will increase skills in professional communication, through drawing, modeling, writing and speaking.

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Important Links

- Department of LAUP: http://laup.arch.tamu.edu/
- Department Financial Assistance: http://dept.arch.tamu.edu/financial-assistance/
- Academic Calendar: http://admissions.tamu.edu/registrar/general/calendar.aspx
- Final Exam Schedule Online: http://admissions.tamu.edu/registrar/general/finalschedule.aspx
- On-Line Catalog: http://catalog.tamu.edu
- Student Rules: http://student-rules.tamu.edu/
- Aggie Honor System Office: http://aggiehonor.tamu.edu/
American Institute of Architecture website  http://www.aia.org/index.htm
Course Change Request

New Course Proposal

Date Submitted: 11/03/17 9:03 am

Viewing: URPN 419 : Community Outreach in the Public Interest
Also Known As: ARCH 419
Last edit: 11/16/17 2:44 pm
Changes proposed by: sdeyong

Programs referencing this course

MINOR-UDPI: Urban Design in the Public Interest - Minor

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galen Newman</td>
<td><a href="mailto:gnewman@arch.tamu.edu">gnewman@arch.tamu.edu</a></td>
<td>979-862-4320</td>
</tr>
<tr>
<td>Craig Babe</td>
<td><a href="mailto:cbabe@tamu.edu">cbabe@tamu.edu</a></td>
<td>979-676-2732</td>
</tr>
</tbody>
</table>

Course prefix  URPN  Course number  419
Department      Land Arch & Urban Planning
College/School  Architecture
Academic Level  Undergraduate
Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Effective term  2018-2019

Complete Course Title
Community Outreach in the Public Interest

Abbreviated Course Title
COMM OUTRCH PUBLIC INTEREST

Catalog course description
Service-learning through community outreach and engagement; planning and organizing community events; conducting public presentations; media dissemination.

Prerequisites and Restrictions
Concurrent enrollment in URPN 409 or ARCH 409.

Concurrent Enrollment  Yes
Concurrent Enrollment
URPN 409 or ARCH 409

Should catalog prerequisites / concurrent enrollment be enforced?
Yes

https://nextcatalog.tamu.edu/courseleaf/approve/
### Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>)</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Or</td>
<td>URPN 409</td>
<td>D</td>
<td>UG</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Or</td>
<td>ARCH 409</td>
<td>D</td>
<td>UG</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Crosslistings: Yes
Crosslisted With: ARCH 419
Stacked: No
Stacked with: 

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit Hour(s)</th>
<th>Contact Hour(s) (per week):</th>
<th>Lecture: 1</th>
<th>Lab: 0</th>
<th>Other: 0</th>
<th>Total: 1</th>
</tr>
</thead>
</table>

Repeatable for credit: No
CIP/Fund Code: 0403010006
Default Grade Mode: Letter Grade(G)
Method of instruction: Lecture

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No

Will this course be taught as a distance education course? No

Is 100% of this course going to be taught in Texas? Yes

Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BS-URPN) Urban and Regional Planning - BS</td>
</tr>
<tr>
<td>(BED-EDAS) Environmental Design Architectural Studies - BED</td>
</tr>
</tbody>
</table>

Has/will this course be(e)n submitted for core curriculum consideration? No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: New Course Syllabus ARCH 419 URPN 419-Comm Outreach.pdf

Letters of support or other documentation: No

Additional information

Reviewer Comments

Galen Newman (gnewman) (10/25/17 3:32 pm): Rollback: per your request
Shannon VanZandt (svanzandt) (10/30/17 3:44 pm): Rollback: update learning outcomes
Sandra Williams (sandra-williams) (11/01/17 12:50 pm): Rollback: There appears to be a course in workflow already (ARCH 419). If you wish to cross-list the courses, only one proposal is needed. Please let me know which one I need to shred so that you can use the course number. Also, in your enforced prerequisite table, there is no such minimum grade of "n/a" - the default is "D".

sdeyong (11/01/17 3:41 pm): Please shred ARCH 419, so that this course number can be used for cross-listing with URPN 419.

Galen Newman (gnewman) (11/01/17 7:52 pm): Rollback: request
sdeyong (11/03/17 9:03 am): Changes made per Curricular Services instructions. See my email for details.
Sandra Williams (sandra-williams) (12/04/17 3:58 pm): UCC approved in December.
Course Number and Title: ARCH 419/URPN 419 Community Outreach in Urban Design

Term: Spring 2019

Location and Time: W 17:00-17:50, ARCA XXX

Course Description and Prerequisites

ARCH 419/URPN 419 Community Outreach in Urban Design (1-0). Credit 1. Service-learning through community outreach and service; planning and organizing community events; conducting public presentations; conducting media dissemination. Prerequisites: ARCH 413, and concurrent enrollment in either ARCH 409 Urban Design Studio in the Public Interest, or URPN 493 Urban and Regional Studies Capstone Course.

1.000 Credit hours
1.000 Lecture hours

Introduction

This course is the community outreach component of the undergraduate minor in Urban Design in the Public Interest. It is the bridging course between URPN 493 Capstone and ARCH 409 Urban Design Studio.

Students and faculty will meet and engage with a target community through a project-based Public Interest Design (PID) paradigm. PID is a participatory vehicle for faculty and students to work with urban communities that traditionally do not have access to high-quality design solutions. The course curriculum is modeled on the interdisciplinary, team-based design practice that students will be engaged in as design professionals.

This course unites students enrolled in the minor's two capstone studios (URPN 493 and ARCH 409), taught in tandem with this course, in local community engagement and outreach.

In this course, students from both capstone studios will collaborate in interdisciplinary teams. These teams will identify and organize activities in a local community, including collecting local information, views, and narratives.

Data collected will be analyzed and evaluated in order to inform and make relevant the public interest design work undertaken in the capstone studios.

Public presentations of ongoing capstone design studio work will be organized and conducted. Students will also work to disseminate the results of their design work through social media and traditional media (local, state and national media).

Each student will record, report, and evaluate the work generated at each stage of the course in a properly formatted academic paper, due at the end of the semester.

Student Learning Outcomes

Following the completion of the course, the student will have gained skill and expertise to be able to:

- Participate effectively in interdisciplinary teams to achieve consensus, meet deadlines, deliver completed project.
- Create new, and manage ongoing strategic partnerships with key community leaders and stakeholders.
- Engage with local communities to gather local information and knowledge from diverse viewpoints.
- Evaluate and analyze data gathered from the community in order to inform PID strategies in the capstone studio courses.
• Communicate and disseminate the information, knowledge, and designs generated in the capstone studio courses, via social and traditional media, at local, state, and national levels.
• Record and report the results of this work in a properly formatted academic paper.

Instructor Information

Instructor: Galen Newman, PhD, ASLA, APA
Email: gnewman@tamu.edu
Office Hours: M-W 10:00 – 12:00
Office Location: Scoates Hall 103

Instructor: Craig Babe, AIA
Email: cbabe@tamu.edu
Office Hours: TR 08:00 – 09:30
Office Location: Langford A 430

Textbooks, Reference Material, Software, Design Materials

A laptop loaded with software appropriate for the presentation of studio work to the public. The Adobe creative suite (including Illustrator, InDesign, and Photoshop) is mandatory.

Design materials to be purchased:
• One 5 x 8.25 Moleskine Art Plus Large Sketchbook for use as a design journal

Texts to be discussed in periodic seminars to take place during the lecture hours:
• Mary Hardin, Richard Eribes, and Corky Poster, eds., From the Studio to the Streets: Service Learning in Planning and Architecture (Sterling: Stylus, 2006).

Grading Policies

A = 90-100; B = 80-89; C = 70-79; D = 60-69; F = <60

Assignment 1. Community Engagement (40% of final grade); conducted in teams:
Item: Identify, organize and hold community activity or activities, and record in a report chapter. Weight (%)
Organize and hold public meeting for final presentation, and record in a report chapter 40
Participation: teamwork; effective partnering; constructive, positive team member; equal effort. 20

Assignment 2. Gathering Community Information (40% of final grade); conducted in teams:
Item: Engage, listen, and network. Record information, narratives, and local knowledge in a report chapter. Weight (%)
Organize and compile gathered information in aid of design problem definition in a report chapter. 40
Participation: teamwork; effective partnering; constructive, positive team member; equal effort. 20

Assignment 3. Media Dissemination (20% of final grade); conducted in teams:
Item: Social media outreach (Facebook, etc.); produce a report chapter chronicling activities. Weight (%)
Traditional media outreach (print, radio, etc.); produce a report chapter chronicling activities. 50
## Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Introduction. Guest lecture – Texas A&amp;M faculty engaged in community outreach</td>
</tr>
<tr>
<td>2</td>
<td>Identify and define community event. Establish social media footprint and traditional media outreach</td>
</tr>
<tr>
<td>3</td>
<td>Guest lecture – Texas A&amp;M faculty engaged in community outreach. Social media ongoing</td>
</tr>
<tr>
<td>4</td>
<td>Assignment 1 due: Conduct community event. Social media ongoing</td>
</tr>
<tr>
<td>5</td>
<td>Organize and compile data gathered from community. Social media ongoing</td>
</tr>
<tr>
<td>6</td>
<td>Guest lecture – Texas A&amp;M faculty engaged in community outreach. Social media ongoing</td>
</tr>
<tr>
<td>7</td>
<td>Assignment 2 due: Using compiled community data, identify, describe, and recommend design problem(s) to be addressed in the studios in a report. Social media ongoing.</td>
</tr>
<tr>
<td>8</td>
<td>Final Community Presentation: begin planning. Social media ongoing.</td>
</tr>
<tr>
<td>9</td>
<td>Guest lecture – Texas A&amp;M faculty engaged in community outreach. Social media ongoing.</td>
</tr>
<tr>
<td>10</td>
<td>Final Community Presentation: continue planning by meeting with key community stakeholders. Social media ongoing.</td>
</tr>
<tr>
<td>11</td>
<td>Final Community Presentation: continue planning. Social media ongoing.</td>
</tr>
<tr>
<td>12</td>
<td>Final Community Presentation: continue planning. Traditional Media outreach. Social media ongoing.</td>
</tr>
<tr>
<td>13</td>
<td>Final Community Presentation: continue planning. Traditional Media outreach. Social media ongoing.</td>
</tr>
<tr>
<td>14</td>
<td>Final report, based on the work produced in class, containing introduction, chapters, and conclusion due, formatted in specified layout design, submitted in digital .pdf format.</td>
</tr>
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</table>
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Course Change Request

New Course Proposal

Date Submitted: 10/20/17 5:05 pm

Viewing: VIBS 456 : Science in Cinema and Society

Last edit: 10/23/17 9:38 am
Changes proposed by: kcursley

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kevin Curley</td>
<td><a href="mailto:kcurley@cvm.tamu.edu">kcurley@cvm.tamu.edu</a></td>
<td>979-845-9287</td>
</tr>
</tbody>
</table>

Course prefix     VIBS       Course number 456
Department        Vet Integrative Biosciences
College/School    Veterinary Med & Biomedical Sc
Academic Level    Undergraduate

Undergraduate course level justification (Select One)
Prerequisites
All prerequisites will be enforced through COMPASS.

Academic Level    Graduate
(alternate)

Effective term    2018-2019

Complete Course Title
Science in Cinema and Society

Abbreviated Course Title
SCIENCE IN CINEMA & SOCIETY

Catalog course description
Examination of the role science depicted in popular culture plays in shaping basic science literacy.

Prerequisites and Restrictions
VIBS 310; majors only; junior or senior classification; approval of instructor.

Concurrent Enrollment No
Should catalog prerequisites / concurrent enrollment be enforced? Yes

Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>VIBS 310</td>
<td>D</td>
<td>UG</td>
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</table>

Stacked No
Crosslisted With

In Workflow
1. VIBS Department Head
2. Curricular Services Review
3. VM Committee Chair UG
4. VM College Dean UG
5. UCC Preparer
6. UCC Chair
7. Faculty Senate Preparer
8. Faculty Senate
9. Provost II
10. President
11. Curricular Services
12. Banner

Approval Path
1. 10/21/17 3:13 pm
   Evelyn Tiffany-Castiglioni (ctiffany):
   Approved for VIBS Department Head
2. 10/23/17 9:39 am
   Sandra Williams
   (sandra-williams):
   Approved for Curricular Services Review
3. 10/30/17 2:00 pm
   Jim Herman (jherman):
   Approved for VM Committee Chair UG
4. 10/30/17 3:34 pm
   Evelyn Tiffany-Castiglioni (ctiffany):
   Approved for VM College Dean UG
5. 11/13/17 6:24 pm
   Sandra Williams
   (sandra-williams):
   Approved for UCC Preparer
6. 12/04/17 3:58 pm
   Sandra Williams
   (sandra-williams):
   Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve#
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: VIBS456_Sample_Syllabus.pdf
Letters of support or other documentation  Yes

Upload files  L.A. Support.pdf

Additional information  VIBS 489 Science in Cinema and Society is certified as a Communication (C) course for four academic years (9/15 to 9/19).

Reviewer Comments  Kevin Curley (kcurlsjr) (10/20/17 11:30 am): VIBS 489 Science in Cinema and Society is certified as a Communication (C) course for four academic years (9/15 to 9/19).
Sandra Williams (sandra-williams) (10/20/17 4:00 pm): Rollback: Please update syllabus - shows old Aggie Honor Code website link.
Kevin Curley (kcurlsjr) (10/21/17 2:57 pm): The syllabus no has the correct link to the Aggie Honor Code.
Sandra Williams (sandra-williams) (12/04/17 3:58 pm): UCC approved in December.

Reported to state?  Add
Welcome to VIBS 456!

As science and technology become increasingly pervasive in popular culture the lines between factual science and scientific fantasy become harder to distinguish, especially for the general public. My goal is foster your ability to critically evaluate the “science” you encounter outside the academic setting.

This course is designed to have you:

- integrate knowledge from a wide array of previous courses in the BIMS curriculum in order to check the accuracy with which scientific principles are conveyed in modern cinema;
- reflect on the role science in modern cinema—and popular culture as a whole—plays in shaping basic science literacy; and
- assemble and articulate sound arguments when discussing misunderstood or misrepresented scientific concepts observed in day-to-day life.

We will utilize a plethora of examples from popular cinema to facilitate our exploration of the perceptions of science in today’s society. You are required to view the assigned movies before class and be ready to discuss them. Your enrollment in this course will allow you access to streaming versions of all required media via the university’s MediaMatrix Internet Media Services (http://mediamatrix.tamu.edu).

As the course goals will be largely pursued through classroom discussions and interactions with guest lecturers, regular attendance is absolutely required. More than one unexcused absence will result in a reduction of 5% from the total point tally used in determining final grades. Information regarding university-approved excuses for missed deadlines is described in the TAMU Student Rules and found at: http://student-rules.tamu.edu/rule07.

Calculation of Final Grade:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-class Quizzes</td>
<td>90 pts.</td>
</tr>
<tr>
<td>Student Journals</td>
<td>180 pts.</td>
</tr>
<tr>
<td>Peer Review Workshop</td>
<td>30 pts.</td>
</tr>
<tr>
<td>Paper - Proposal</td>
<td>50 pts.</td>
</tr>
<tr>
<td>Elevator Pitch of Proposal</td>
<td>50 pts.</td>
</tr>
<tr>
<td>Paper - Draft</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Paper - Final Version</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Group mini-Presentations</td>
<td>100 pts.</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>200 pts.</td>
</tr>
<tr>
<td>Class Participation</td>
<td>100 pts.</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1000 pts.</strong></td>
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Letter Grade Equivalent

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<tr>
<td>A</td>
<td>≥ 899.5 pts</td>
</tr>
<tr>
<td>B</td>
<td>899.5 &gt; B ≥ 799.5</td>
</tr>
<tr>
<td>C</td>
<td>799.5 &gt; C ≥ 699.5</td>
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<tr>
<td>D</td>
<td>699.5 &gt; D ≥ 599.5</td>
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<tr>
<td>F</td>
<td>&lt; 599.5</td>
</tr>
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</table>

Students must obtain at least 70% of the points from oral presentations (210/300 pts.) and written assignments (300/430 pts.) in order to receive graduation credit for a C course.
**Tentative Schedule:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Viewing or Assignment Due</th>
<th>Lecture Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 17</td>
<td></td>
<td>Introduction &amp; Syllabus Overview</td>
</tr>
<tr>
<td></td>
<td>Jan 19</td>
<td></td>
<td>Personal Journals</td>
</tr>
<tr>
<td>2</td>
<td>Jan 24</td>
<td></td>
<td>A Scientist Caricature</td>
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<tr>
<td></td>
<td>Jan 26</td>
<td><em>Arrowsmith</em> (1931)</td>
<td>The Physician-Scientist</td>
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<td>3</td>
<td>Jan 31</td>
<td></td>
<td>Demystifying PowerPoint</td>
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<td></td>
<td></td>
<td></td>
<td><strong>Students Pitch Their Proposals</strong></td>
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<tr>
<td>4</td>
<td>Feb 7</td>
<td><strong>Paper - Proposal</strong></td>
<td><strong>Students Pitch Their Proposals</strong></td>
</tr>
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<td></td>
<td>Feb 9</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>Feb 14</td>
<td><strong>Journals (first 6 entries)</strong></td>
<td>Observations from Your Journals</td>
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<tr>
<td></td>
<td>Feb 16</td>
<td><em>Contact</em> (1997)</td>
<td>Determined and Defiant</td>
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<td></td>
<td>Feb 21</td>
<td></td>
<td>Group Mini-Presentations</td>
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<tr>
<td></td>
<td>Feb 23</td>
<td><em>The Boys from Brazil</em> (1978)</td>
<td>Genes Are Just Part of the Picture</td>
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<tr>
<td>6</td>
<td>Feb 28</td>
<td></td>
<td>Group Mini-Presentations</td>
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<tr>
<td></td>
<td>Mar 2</td>
<td><em>The China Syndrome</em> (1979)</td>
<td><em>Guest: Andrew Zarella</em> Dept. of Chemistry</td>
</tr>
<tr>
<td>7</td>
<td>Mar 7</td>
<td><strong>Paper - Draft</strong></td>
<td>Peer Review Workshop</td>
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<td></td>
<td></td>
<td><strong>Spring Break</strong></td>
<td></td>
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<tr>
<td>9</td>
<td>Mar 21</td>
<td><strong>Journals (next 6 entries)</strong></td>
<td>Observations from Your Journals</td>
</tr>
<tr>
<td></td>
<td>Mar 23</td>
<td><em>Contagion</em> (2011)</td>
<td><em>Guest: Christine Budke, D.V.M., Ph.D.</em> Dept. of Veterinary Integrative Bioscience</td>
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<tr>
<td></td>
<td>Mar 30</td>
<td></td>
<td>Group Mini-Presentations</td>
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<tr>
<td>11</td>
<td>Apr 4</td>
<td>Film to be Determined</td>
<td>Student Choice – Film Picked by Class</td>
</tr>
<tr>
<td></td>
<td>Apr 6</td>
<td></td>
<td><strong>Student Presentations</strong></td>
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<tr>
<td>12</td>
<td>Apr 11</td>
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<td><strong>Student Presentations</strong></td>
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<tr>
<td>13</td>
<td>Apr 13</td>
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<td><strong>Student Presentations</strong></td>
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<tr>
<td>14</td>
<td>Apr 18</td>
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<td><strong>Student Presentations</strong></td>
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<td>Apr 20</td>
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<td><strong>Student Presentations</strong></td>
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<tr>
<td>15</td>
<td>Apr 25</td>
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<td><strong>Student Presentations</strong></td>
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<tr>
<td></td>
<td>Apr 27</td>
<td></td>
<td><strong>Student Presentations</strong></td>
</tr>
<tr>
<td></td>
<td>May 2</td>
<td><strong>Journals (final 6 entries)</strong></td>
<td>Redefined as Friday (Class Won’t Meet)</td>
</tr>
</tbody>
</table>

*A, C, G* Indicates that films are offered on a commercial rental services. A = Apple iTunes N = Netflix and G = Google Play.
Brief Assignment Overview:

**In-class Quizzes:** On the days on which film viewings are to have been completed, there will be a quiz covering the main concepts of each film.

**Student Journals:** Students will keep journals in order to reflect upon the misuse of scientific concepts they encounter outside of the academic setting. They must compose **at least 3 journal entries every 2 weeks** (with the exception of the first and last weeks of the semester), **for a minimum of 18 entries**. Journal entries need not be lengthy, but they do need to convey complete thoughts. Usually a paragraph or two will do, but you may want to write more than that on certain subjects. Avoid the urge to research the scientific principles related to your journal entries; these critiques should be based on your existing knowledge base and be written impromptu.

**Please bring your journal to class each day; you may be asked to relate something from it during class discussion.**

**Paper:** Students will be required to craft a **1500-word** critical evaluation of the scientific concepts presented in a film of their choosing (other than those already assigned). These papers must at least (1) explore the basic scientific aspects of the major themes presented in that film, and (2) compare and contrast the “science” portrayed with what is currently understood by the scientific community. Your discussion must be supported by **at least 10 references from peer-reviewed scientific literature.**

Proposal – This will serve as a brief presentation of the main ideas you will attempt to cover in your paper. It should be the result of your initial brainstorming and a bit of preparatory literature research. The proposal must include the following information:

a. A brief summary of your chosen film’s plot. (**about 200 words**)

b. A list of the primary scientific principles that are incorporated into the film.

c. A short synopsis of the current scientific understanding of at least one of the above principles. (**about 300 words**)

d. One reference from peer-reviewed literature.

Draft – This should encompass the full breath of ideas that will make up the final version; however, they may be somewhat unpolished. **Drafts must adhere to the minimum length and reference requirements** listed above.

**Group mini-Presentation:** Throughout the semester students will be randomly assigned to small groups in order to prepare short presentations (**about 5 min.**) covering the various scientific components related to the assigned films. These are meant to acclimate the students to presenting in front of the class and allow for opportunity to bolster their oral-presentation skills.

**Oral Presentation:** Students will be required to give a **15 to 20-minute seminar** about the major topics discussed in their paper. In preparation for this oral presentation, each student must attend one of the scheduled (TBA) practice sessions in order to present a dry run of their seminar to the instructor. Following the presentation, students should be prepared to answer questions from their peers. Using the included evaluation sheet, the instructor, as well as the other students, will provide critique and feedback for improvement. Presentation scores will be determined by adding the average student-evaluated score* to the instructor-evaluated score.

* Individual student-evaluated scores deviating from the instructor’s score by 25% or greater will be replaced with the instructor-evaluated score when calculating the average student-evaluated score.
**Americans with Disabilities Act (ADA) Policy Statement:**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit [http://disability.tamu.edu](http://disability.tamu.edu).

**Academic Integrity Statement:**

As the Aggie Honor Code states, “An Aggie does not lie, cheat, or steal or tolerate those who do.” For additional information, please visit [http://aggiehonor.tamu.edu/](http://aggiehonor.tamu.edu/).
Student Seminar Evaluation

Evaluator: ____________________________
Speaker: ______________________________
Date: ________________________________

I. Personal confidence, appearance and poise (10) _________
II. Voice, eye contact, and presenting without distracting mannerisms (10) _________
III. Organization and presentation of topic (20) _________
IV. Knowledge of topic and evidence of preparation for presentation (25) _________
V. Use of visuals to support presentation and quality of visuals used (15) _________
VI. Awareness of time and length of seminar (10) _________
VII. Response to questions (10) _________

Total (100) _________

Main strengths of the presentation, suggestions for improvement, and other general remarks:
Course Change Request

New Course Proposal

Date Submitted: 10/25/17 1:16 pm

Viewing: VIST 235: Theory and Practice in Visualization

Last edit: 10/26/17 10:54 am
Changes proposed by: traciz

Programs referencing this course

BS-VIST: Visualization - BS

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@viz.tamu.edu">trl@viz.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
</tbody>
</table>

Course prefix: VIST  
Course number: 235

Department: Visualization
College/School: Architecture
Academic Level: Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level (alternate): Graduate
Effective term: 2018-2019

Complete Course Title:
Theory and Practice in Visualization

Abbreviated Course Title:
THEORY & PRACTICE IN VISUALIZTN

Catalog course description:
Professional material development, media theory and trends, copyright law and common business practices; professional practice in pursuit of career paths for creative fields in Visualization.

Prerequisites and Restrictions:
Grade of C or better in VIST 205.

Concurrent Enrollment:
No

Should catalog prerequisites / concurrent enrollment be enforced?
Yes

In Workflow
1. VIZA Department Comm Chair
2. VIZA Department Head
3. Curricular Services Review
4. AR Committee Preparer
5. AR Committee Chair
6. AR College Dean
7. UCC Preparer
8. UCC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path
1. 10/25/17 1:19 pm
   Terry Larsen (tlarsen): Approved for VIZA Department Comm Chair
2. 10/25/17 2:41 pm
   Tim McLaughlin (timm): Approved for VIZA Department Head
3. 10/26/17 10:54 am
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
4. 10/26/17 11:48 am
   Ann Broussard (ambroussard): Approved for AR Committee Preparer
5. 10/31/17 2:16 pm
   Leslie Feigenbaum (lfeigenbaum): Approved for AR Committee Chair
6. 11/07/17 9:56 am
   Leslie Feigenbaum (lfeigenbaum): Approved for AR College Dean
7. 11/13/17 6:25 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
8. 12/04/17 4:02 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/
Enforced Prerequisites / Concurrent Enrollment

<table>
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<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
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<tr>
<td></td>
<td>VIST 205</td>
<td>C</td>
<td>UG</td>
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</table>

Crosslistings: No  Crosslisted With
Stacked: No  Stacked with

Semester: 2
Credit: 2
Hour(s): Contact Hour(s) (per week):
Lecture: 1  Lab: 2  Other: 0  Total: 3

Repeatable for credit? No
Three-peat? No
CIP/Fund Code: 5001020003
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture and Laboratory
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No
Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
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<tbody>
<tr>
<td>(BS-VIST) Visualization - BS</td>
</tr>
</tbody>
</table>

Elective (select program)

Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? Yes

Has/will this course be(en) submitted for ICD consideration? No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: vist235TheoryPracticeVisualization.docx

Letters of support or other documentation: No

Additional information: Removed learning objective #2.

Reviewer Comments:
- Terry Larsen (t-larsen) (09/29/17 4:26 pm): Rollback: writing requirements need to be fixed.
- Sandra Williams (sandra-williams) (10/02/17 5:17 pm): Rollback: If you require a grade of C or better in the enforced prerequisite table, a statement is needed in the catalog prerequisites ("Grade of C or better in... ").
- Sandra Williams (sandra-williams) (10/04/17 9:52 pm): No response to comment. Assume minimum grade of D.
- Leslie Feigenbaum (l-feigenbaum) (10/10/17 2:52 pm): Rollback: SLO need corrections
- Leslie Feigenbaum (l-feigenbaum) (10/17/17 2:55 pm): Rollback: Learning outcome 6 add visual and demonstrate
- Leslie Feigenbaum (l-feigenbaum) (10/24/17 2:53 pm): Rollback: Get With Katy Attached Syl
- Sandra Williams (sandra-williams) (12/04/17 4:02 pm): UCC approved in December.

Reported to state?

Add
VIST 235 Theory & Practice in Visualization

Fall 2019
Sherman Finch

I. COURSE DESCRIPTION

VIST 235 Theory & Practice in Visualization.
Credits 2. 1 Lecture Hour. 2 Lab Hours.

Professional material development, media theory and trends, copyright law, and common business practices; professional practice in pursuit of career paths for the Bachelor of Science in creative fields in Visualization.

Prerequisite: VIST 205.

II. INTRODUCTION

This course will introduce students to the professional practices and theory surrounding the business aspects and career paths in today’s fields of creative visualization. This class will be writing intensive and will be structured around readings, group discussions, class assignments, student presentations as well as visiting guest presentations. The main course objective is to build a critical and practical framework from which undergraduate students can develop a professional strategy to help prepare for a career after college.

Topics will include goal setting, time management, finding resources, documentation and portfolio, statements, resumes, promotion, financial planning and fundraising, entrepreneurship, marketing, networking, and other opportunities and tools that can support working in the field. Outside weekly reading is an essential component to the course which provides a platform for discussion on issues pertaining to professional practice and current creative fields in Visualization.

III. LEARNING OBJECTIVES

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

1. Analyze and write a mission statement based on your choice of a creative field.
2. Design a Professional creative website, vimeo channel, or physical portfolio.
3. Formulate a plan of personal and/or professional goals; create documents and visual assets necessary to carry out plan.
4. Describe and apply the laws and legal practices surrounding your prospective career field path.
5. Demonstrate proficiency in visual, verbal, and written skills useful in the creative fields.

**Department Learning Outcomes**

<table>
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<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tr>
<td>Critical Thinking</td>
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<tr>
<td>Communication</td>
<td></td>
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<tr>
<td>Teamwork</td>
<td></td>
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<td>Personal Responsibility</td>
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<tr>
<td>Social Responsibility</td>
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**Weave Assessment Learning Objectives**

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<tr>
<td>To Stimulate Visual Thinking</td>
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<td>To Nurture Design Skills</td>
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<td>To Enhance a Multidisciplinary Focus</td>
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<td>To Encourage Collaborative Behavior</td>
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<td>To Strengthen Ethical Behavior</td>
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<td>To Improve Personal Responsibility</td>
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</table>

**IV. CONTACT INFORMATION**

Instructor: Sherman Finch  
Office Hours: M/W 9-10am or 3-4pm by appointment  
Office Location: Langford C104  
Email: sfinch@tamu.edu
## V. COURSE TOPICS AND CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Lecture / Discussion</th>
<th>Project / Assignment</th>
<th>Readings</th>
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<tbody>
<tr>
<td>1</td>
<td>Self-assessment, and success</td>
<td>Class introduction myths, fears, stereotypes Current state of creative industries</td>
<td>Students will form groups and research the current state of the industries focus. Each team will present findings</td>
<td>01 &amp; 02 What are creative industries and creative commerce</td>
</tr>
<tr>
<td>2</td>
<td>Goals and organizing</td>
<td>Roles and characters Group activity: draw a diagram of the industry</td>
<td>Develop a mission statement that outlines clear goals and career paths. Include an obituary about you.</td>
<td>02: goals and organizing</td>
</tr>
<tr>
<td>3</td>
<td>Goals and organizing</td>
<td>Intro to developing portfolios for creative professions</td>
<td>Read obituary, get started, work on portfolios. 10 work samples and work sample checklist due next Thursday</td>
<td>03: design a portfolio GYST: work samples, documentation and portfolio</td>
</tr>
<tr>
<td>4</td>
<td>Portfolio</td>
<td>Student presentation: portfolio and checklist/ best practices Student presentation: shooting work/ putting a reel together</td>
<td>Artist statement exercise/outline Write an Artist Statement Draft</td>
<td>GOL: artist statement/ art bios presenting yourself 04: artist statement</td>
</tr>
<tr>
<td>5</td>
<td>Bio / artist statement</td>
<td>Artist Statement Workshop: Go over exercise STUDENT PRESENTATION: Artist Statement or Bio</td>
<td>Bring in old resume – work or job history Contact interviewees for SKYPE interviews</td>
<td>GOL: Resumes 05: resume/bio</td>
</tr>
<tr>
<td>6</td>
<td>Resume and biography</td>
<td>STUDENT PRESENTATION: Resume Dos and Don’ts/ The Artist Biography Resume Workshop</td>
<td><em><strong><strong>Final Resume and Bio: DUE WEEK 11</strong></strong></em>* Create or Update Website or Blog for review on TH</td>
<td>GOL: Networking 06: website and PR</td>
</tr>
<tr>
<td>7</td>
<td>Website and blog, and varies online PR</td>
<td>Website – Best Practices Review Website and Blog Drafts STUDENT PRESENTATION: Marketing and other PR/ Online Etiquette/Blogs and Social Media</td>
<td>Create or Update Website Blog – for review on TH Research online job opportunities/ registries – bring in 3 resources (venue, description)</td>
<td>GOL: Creative Market places, existing positions 07: Professional packet and 07: Freelancing practices</td>
</tr>
<tr>
<td>8</td>
<td>Grants, fellowships, contests,</td>
<td>STUDENT PRESENTATION: Contests Relationships / Proposals/ Pricing &amp; Salary /</td>
<td>PROFESSIONAL PACKETS AND GRADES: DUE WEEK 11</td>
<td>GOL: Agents, Consultants, Talent Agencies</td>
</tr>
</tbody>
</table>
### VI. GRADING AND EVALUATION:

**Evaluation**
We will observe all university policies related to attendance. An assignment turned in on time may be reworked at any time until the last day of class for reconsideration of the grade. A late assignment receives a 10-point reduction for each class day beyond the deadline and no makeup is offered. Students will be graded on participation and engagement, which includes class involvement, on-time attendance, proactive participation, and exceeding assignment requirements.
Reading presentations
Weekly presentation and discussion of readings. Reading summaries may take various forms: in class discussions, written responses, and presentations. One student will be assigned “Discussion Leader” for each weekly topic and reading assignment.

Student Interview
Each of you will choose a professional in the industry of creative visualization to interview during class using Skype. Interviews must be arranged prior to spring break.

Career paths
Identify at least two areas of focus (animation, motion graphics) where you see yourself building a career in the world of Visualizations. List up to three industries that would support this focus (film, television, mobile industry, etc.) to which you would create your profession. Develop a strategy and body of promotional material that would assist you in this endeavor.

Promotional Materials / Exercises:
A majority of this class will be focused on the research and writing aspects of professional practice and will include the following:
- Mission statement – writing focus
- Media studies paper & presentation - writing focus
- Case studies – writing focus
- Resume, Bio, and cover letter - writing focus
- Artist and/or Research Statement - writing focus
- Portfolio materials & documentation – design focus
- Website / Blog / Vimeo – design & development focus

Participation and Engagement
Your effort in the class relative to discussion, attendance, other participation, and ideas. Consider being an active contributor to the class blog.

Each assignment will be based on 100 points. Your final grade will be based upon the following:

| Exercises | 10% |
| Skype Interview | 5% |
| Presentation | 10% |
| Professional Materials | 70% |
| - Mission statement (w) | 15% |
| - Media studies paper & presentation (w) | 20% |
| - Case studies (w) | 10% |
| - Resume, Bio, and cover letter (w) | 5% |
| - Artist and/or Research Statement (w) | 10% |
| - Portfolio materials & documentation (D) | 5% |
| - Website / Blog / Vimeo (DD) | 5% |
| Class Participation | 5% |
| TOTAL | 100% |
Please note that VIST235 is a University required in-discipline writing course. Writing successfully is an important part of your academic education. Writing assignments (identified with a ‘w’ above) account for 60% of the semester grade. Your average for these projects must be 70% (C) or higher to pass this course.

**Assignment Grading Rubric:** The actual grading criteria will be related to these categories but will be more specific to the given assignment. The scores noted below are relative to a 100-point assignment.

- **F:** 60 and below: The student work is unresolved; the intentions are unclear and major criteria or goals lack resolution; Presentation is incomplete and/or of poor quality; There is a complete lack of problem solving intent, artistic content and/or visual merit.
- **D:** 60 - 69: The work has problems in two or more major areas; Skill and problem development is marginal or incomplete; The project lacks imagination and/or design/artistic potential.
- **C:** 70 – 79: The student has completed the basic assignment, but the work lacks depth of understanding; Some aspects are not completely satisfied and the work contains little promise even though most issues have been addressed.
- **B:** 80 – 89: The student work shows imagination and potential; Presentation and visual content is good; The assignment requirements are fulfilled but in need of more refinement or development; There are no major issues that would require a total redesign of the project.
- **A:** 90 – 100: The student work has imagination and the response to the assignment show understanding and thought; The work is highly developed and well presented; The entire project shows depth and breadth and is well coordinated; The project potential has been achieved.

**Class Participation Rubric:** The actual grading criteria will be related to these categories but will be more specific to the given assignment. The scores noted below are relative to a 100-point assignment.

- **F:** 60 and below: The student is consistently absent or significantly late to class; is rarely prepared for class; is rarely a willing participant or responsive to questions; consistently exhibits unprofessional and/or disruptive behavior; offers virtually no considered opinions, researched information, or constructive criticism.
- **D:** 60 - 69: The student is frequently absent or significantly late to class; is only occasionally prepared for class; is only occasionally a willing participant or responsive to questions; frequently exhibits unprofessional and/or disruptive behavior; only infrequently offers considered opinions, researched information, and constructive criticism.
C: 70 – 79: The student is occasional absent; has Limited interaction with peers; Preparation, and therefore level of participation, are both inconsistent. When prepared, participates constructively in discussions and makes relevant comments based on the assigned material. Group dynamic and level of discussion are not affected by the student’s presence.

B: 80 – 89: The student rarely absent; makes a sincere effort to interact with peers. Arrives mostly, if not fully, prepared. Participates constructively in ongoing discussions. Makes relevant comments based on the assigned material. Group dynamic and level of discussion are occasionally better (never worse) because of the student’s presence.

A: 90 – 100: The student is never absent; actively supports, engages and listens to peers. Arrives fully prepared at almost every session. Plays an active role in discussions. Comments advance the level and depth of the dialogue. Group dynamic and level of discussion are often better because of the student’s presence.

Attendance: Attendance is mandatory to complete this course. Punctuality is a symbol of professionalism and responsibility. Excused absences are covered by the University policy. In such cases you should speak with me as soon as possible to arrange for make up work. No grace will be extended for unexcused absences and significant penalties will result per the grading policies listed above. Any more than three unexcused absences will result in your grade being lowered one letter. Being excessively late or leaving early will be marked as an unexcused absence.

The University views class attendance as the responsibility of an individual student. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/.

Make-up Policy: If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.
Overdue Assignments: Late work not related to an excused absence, will have 10 points deducted for each week (or portion thereof) that the project is late. Project deadlines for late work with an excused absence may be handed in without penalty up to the time agreed upon by the instructor and the student.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.

VII. REQUIRED TEXT

- Introducing the Creative Industries: From Theory to Practice, Rosamund Davis

RECOMMENDED TEXTS

- Creative Research: The Theory and Practice of Research for the Creative Industries, Hillary Collins
- ART/WORK: Everything you need to Know (and do) As You Pursue Your Art Career, Heather Darcy Bhandari, Jonathan Melber
- Graphic Artist's Guild Handbook of Pricing and Ethical Guidelines, artist guild graphic
- http://thesodareport.com/
- SODA

VIII. COSTS

No additional costs are expected for this course beyond the required textbook.

IX. ADDITIONAL INFORMATION

*Americans with Disabilities Act (ADA) Policy Statement*

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for
reasonable accommodation of their disabilities. If you believe you have a
disability requiring an accommodation, please contact Disability Services,
currently located in the Disability Services building at the Student Services
at White Creek complex on west campus or call 979-845-1637. For
additional information, visit http://disability.tamu.edu.

**Plagiarism:** In this course, we want to encourage collaboration and the free
interchange of ideas among students and in particular the discussion of
reading and writing assignments and review questions, approaches to
solving them, etc. However, we do not allow plagiarism, which, as
commonly defined, consists of passing off as one's own the ideas, words,
 writings, etc. that belong to another. In accordance with this definition, you
are committing plagiarism if you copy the work of another person and turn it
in as your own, even if you have the permission of that person. Plagiarism
is one form of scholastic dishonesty. If you have questions regarding
plagiarism, please consult the latest issue of the Texas A&M University
Student Rules, under the section on Scholastic Dishonesty.

**Aggie Honor Code:**

"An Aggie does not lie, cheat or steal or tolerate those who do"

Upon accepting admission to Texas A&M University, a student immediately
assumes a commitment to uphold the Honor Code, to accept responsibility
for learning and to follow the philosophy and rules of the Honor System.
Students will be required to state their commitment on examinations,
research papers and other academic work. Ignorance of the rules does not
exclude any member of the Texas A&M University community from the
requirements or the processes of the Honor System. For additional
information please visit: [http://aggiehonor.tamu.edu/Rules-and-

**Defacement of Property:** "It is unlawful for any person to damage or
deface any of the buildings, statues, monuments, trees, shrubs, grasses, or
flowers on the grounds of any state institutions of higher education (Texas
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The words damage or deface refer specifically to any and all actions,
whether direct or indirect, that either diminish the value or mar the
appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 10/17/17 4:14 pm

Viewing: VIST 339: Research Techniques in Visualization

Last edit: 10/17/17 9:40 pm

Changes proposed by: tricz

Programs referencing this course: BS-VIST: Visualization - BS

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@vist.tamu.edu">trl@vist.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
</tbody>
</table>

Course prefix: VIST  
Department: Visualization  
College/School: Architecture  
Academic Level: Undergraduate  
Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level: Graduate  
Effective term: 2018-2019  
Complete Course Title: Research Techniques in Visualization  
Abbreviated Course Title: RESEARCH TECH IN VISUALIZATION

Catalog course description:
Research techniques used in visualization and creative fields; qualitative and quantitative methods, formulating research questions; determining appropriate methods, research planning and designing, data collection, testing and assessment; data analysis and interpretation.

Prerequisites and Restrictions:
Grade of C or better in VIST 206 and VIST 235.

Concurrent Enrollment: No

Should catalog prerequisites/concurrent enrollment be enforced?: Yes

In Workflow:
1. VIZA Department Comm Chair
2. VIZA Department Head
3. Curriculum Services Review
4. AR Committee Preparer
5. AR Committee Chair
6. AR College Dean
7. UCC Preparer
8. UCC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path:
1. 10/17/17 4:20 pm
   Terry Larsen (t-larsen): Approved for VIZA Department Comm Chair
2. 10/17/17 4:29 pm
   Tim McLaughlin (timm): Approved for VIZA Department Head
3. 10/17/17 9:41 pm
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
4. 10/18/17 7:17 am
   Ann Broussard (ambroussard): Approved for AR Committee Preparer
5. 10/24/17 2:58 pm
   Leslie Feigenbaum (l-feigenbaum): Approved for AR Committee Chair
6. 10/24/17 3:31 pm
   Leslie Feigenbaum (l-feigenbaum): Approved for AR College Dean
7. 11/13/17 6:25 pm
   Sandra Williams (sandra-williams): Approved for UCC Preparer
8. 12/04/17 4:03 pm
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve#
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>)</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VIST 206</td>
<td>C</td>
<td>UG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And</td>
<td>VIST 235</td>
<td>C</td>
<td>UG</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crosslistings: No  Crosslisted With
Stacked: No  Stacked with

Semester: 3  Credit Hour(s): 3
Contact Hour(s) (per week): 3  Lecture: 3  Lab: 0  Other: 0  Total: 3
Repeatable for credit?: No
Three-peat?: No
CIP/Fund Code: 5001010003
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

<table>
<thead>
<tr>
<th>Program(s)</th>
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<tbody>
<tr>
<td>(BS-VIST) Visualization - BS</td>
</tr>
</tbody>
</table>

Required (select program)

Elective (select program)
Has/will this course be(en) submitted for core curriculum consideration? No

Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for
ICD consideration?

## Course Syllabus

### Syllabus:
Upload syllabus

#### Upload syllabus
vist339ResearchinVisualization.docx

### Letters of support or other documentation
No

### Additional information

#### Reviewer Comments
Terry Larsen (t-larsen) (10/13/17 3:13 pm): Rollback: removed s

#### Sandra Williams (sandra-williams) (10/17/17 9:41 pm):
Edits made to catalog prerequisites to include "grade of C or better in..." to comply with enforced prerequisite table.

#### Sandra Williams (sandra-williams) (12/04/17 4:03 pm):
UCC approved in December.

### Reported to state?
Add
I. COURSE DESCRIPTION

VIST 339 Research Techniques in Visualization.
Credit Hours 3. 3 Lecture Hours.

Research techniques used in visualization and creative fields; qualitative and quantitative methods, formulating research questions, determining appropriate methods, research planning and designing, data collection, testing and assessment, data analysis and interpretation.

Prerequisites: VIST 206 and VIST 235.

II. INTRODUCTION

As creators of our visual culture, we tend to be more concerned about the final visuals than the process that leads to their creation. To innovate in the visual, creative fields, however, requires more than a random ‘idea’ that we would like to work on. Today, visual artists and designers design services, processes, organizations and the many components involved in each. To be innovative, we need to discover, define and solve problems based upon evidence and be able to demonstrate the validity of our positions if we are to compete in the marketplace of technological change that is around us.

This course is concerned with the processes, strategies, methods and techniques that help us channel creative energies toward solutions that can change our world with informed decisions, not personal opinion.

III. LEARNING OUTCOMES

By the end of this course, the student will be able to:
1. Identify and apply the research vocabulary, strategies, and principles applicable to visualization.
2. Apply research tools to identify new and unexpected solutions to problems of interest in our visual culture.
3. Develop informed conclusions that reflect an understanding of multiple (and sometimes conflicting) sources of information.
4. Compose a formal research paper as a response to the definition
of the student’s identified research topic.
5. Synthesize researched information and prepare a visual public research presentation.
6. Demonstrate oral, written and visual design skills to communicate ideas and research findings.

Departmental Learning Outcomes

1 2 3 4 5 6
Critical Thinking  ×  ×  ×  ×
Communication  ×  ×  ×

Teamwork
Personal Responsibility  ×
Social Responsibility

Weave Assessment Learning Objectives

1 2 3 4 5 6
To Stimulate Visual Thinking  ×  ×  ×  ×  ×  ×
To Nurture Design Skills  ×  ×  ×
To Enhance a Multidisciplinary Focus  ×  ×  ×
To Encourage Collaborative Behavior
To Strengthen Ethical Behavior
To Improve Personal Responsibility  ×

IV. CONTACT INFORMATION

Terry R. Larsen
Office: Langford C418
Office Hours: TBA
Email: trl@viz.tamu.edu
V. COURSE TOPICS AND CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture/Discussion Topic</th>
<th>Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course Introduction; The nexus of research, visual design and creativity; why its important</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Defining the research problem; understanding research methods and methodologies</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Qualitative research; what is it? case studies</td>
<td>Research topic due</td>
</tr>
<tr>
<td>4</td>
<td>Qualitative research (cont); hallmarks of good qualitative research</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Quantitative research; what is it? surveys</td>
<td>Bibliography Due</td>
</tr>
<tr>
<td>6</td>
<td>Quantitative research (cont); user-centered design research, hallmarks of good quantitative research</td>
<td>Exam # 1</td>
</tr>
<tr>
<td>7</td>
<td>Visual research; what is it? Visual and material culture studies</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>The Research Poster; making your point in a visually compelling way; what’s included</td>
<td>First Draft Due</td>
</tr>
<tr>
<td>9</td>
<td>Visual research (cont); hallmarks of good quantitative research</td>
<td>Poster Concept Due</td>
</tr>
<tr>
<td>10</td>
<td>Applied research; what is it? Action research</td>
<td>Exam # 2</td>
</tr>
<tr>
<td>11</td>
<td>Applied research (cont); case studies, hallmarks of good applied research</td>
<td>Second Draft Due</td>
</tr>
<tr>
<td>12</td>
<td>Research writing; the final report; components of; how to reach a conclusion</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Research writing (cont); the design brief and executive summary</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Final poster review</td>
<td>Final Poster and paper due</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Final Exam: Time TBA</td>
</tr>
</tbody>
</table>

VI. GRADING AND EVALUATION:

Graded projects for this course are outlined below. VIST 339 is an in-discipline writing intensive course. 50% of the final course grade is directly related to the written materials produced in this course. You must earn a minimum of 70 ("C") on the average of the writing projects to pass this course regardless of your performance in the remainder of the course. The two projects that compose the written grading component are the research paper(40%) and the poster(10%).
Your **semester grade** is calculated as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research paper</td>
<td>40%</td>
</tr>
<tr>
<td>Research poster</td>
<td>10%</td>
</tr>
<tr>
<td>Exams(2)</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

Your **final grade** will be based on the standard University scale. This numerical evaluation will be converted to a letter grade according to categories defined below:

- \(>= 90 \leq 100\) A
- \(>= 80 < 90\) B
- \(>= 70 < 80\) C
- \(>= 60 < 70\) D
- \(< 60\) F

**Attendance**: The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at [http://student-rules.tamu.edu/](http://student-rules.tamu.edu/).

Students are expected to attend class and participate in the discussions. Two unexcused absences are allowed without penalty. However, after the second unexcused absence, subsequent unexcused absences will result in a 5 point reduction in your final semester grade.

**Make-up Policy**: If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student rule 7 for details [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07)). The fact that these are university excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.
VII. REQUIRED MATERIALS/TEXT


VIII. COSTS

The cost of printing and mounting the poster should not exceed $25. No other cost beside the textbook is anticipated for the course.

IX. ADDITIONAL INFORMATION

Americans with Disabilities Act (ADA) Policy Statement
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Plagiarism: In this course, we want to encourage collaboration and the free interchange of ideas among students and in particular the discussion of reading and writing assignments and review questions, approaches to solving them, etc. However, we do not allow plagiarism, which, as commonly defined, consists of passing off as one’s own the ideas, words, writings, etc. that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one form of scholastic dishonesty. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section on Scholastic Dishonesty.

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Course Change Request

New Course Proposal

Date Submitted: 10/23/17 1:33 pm

Viewing: VIST 354: Principles of Multimedia Design

Last edit: 10/23/17 4:13 pm
Changes proposed by: traciz

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@viz.tamu.edu">trl@viz.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
</tbody>
</table>

Course prefix  VIST  Course number  354

Department  Visualization
College/School  Architecture
Academic Level  Undergraduate

Undergraduate course level justification (Select One)
Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level  Graduate
Effective term  2018-2019

Complete Course Title
Principles of Multimedia Design
Abbreviated Course Title  PRINCIPLES MULTIMEDIA DESIGN

Catalog course description
Application and design of web and mobile platforms to create interactive products; planning, design, and development of intuitive user interfaces; focus on user-centered design, interaction principles, and standards-based technologies.

Prerequisites and Restrictions
Grade of C or better in VIST 271 or ARTS 303.

Concurrent Enrollment  No
Should catalog prerequisites / concurrent enrollment be enforced?  Yes
**Enforced Prerequisites / Concurrent Enrollment**

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>)</th>
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<tr>
<td>Or</td>
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<td>UG</td>
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<tr>
<td></td>
<td>ARTS 303</td>
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**Crosslistings**
- No
- Crosslisted With

**Stacked**
- No
- Stacked with

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<th>Lab:</th>
<th>Other:</th>
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<td>3</td>
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**Repeatable for credit?**
- No

**Three-peat?**
- No

**CIP/Fund Code**
- 1108010019

**Default Grade Mode**
- Letter Grade(G)

**Alternate Grade Modes**
- Satisfactory/Unsatisfactory

**Method of instruction**
- Lecture and Laboratory

**Will sections of this course be taught as non-traditional? [i.e., parts of term, distance education]**
- No

**Will this course be taught as a distance education course?**
- No

**Is 100% of this course going to be taught in Texas?**
- Yes

**Will classroom space be needed for this course?**
- Yes

**This will be a required course or an elective course for the following programs:**

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<tr>
<td>(BS-VIST) Visualization - BS</td>
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<tr>
<td>(MINOR ARTV) Art - Minor</td>
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</table>

**Has/will this course be(en) submitted for core curriculum consideration?**
- No

**Has/will this course be(en) submitted for Writing or Communication consideration?**
- No
Course Syllabus

Syllabus: Upload syllabus
Upload syllabus vist354PrinciplesofMultimediaDesign.docx

Letters of support or other documentation: No

Additional information

Reviewer Comments
- Tim McLaughlin (timm) (10/20/17 4:09 pm): Rollback: Please pursue different name.
- Tim McLaughlin (timm) (10/23/17 1:00 pm): Rollback: Needs a new title. Perhaps: "Principles of Interaction Design" or just plain "Interaction Design", but I think I prefer "principles" so that further subjects can be differentiated from this one, that is the fundamentals.
- Terry Larsen (t-larsen) (10/23/17 1:24 pm): Rollback: new title
- Sandra Williams (sandra-williams) (12/04/17 4:03 pm): UCC approved in December.

Reported to state?: Add
VIST 354 Principles of Multimedia Design

Fall 2019
Howard Eilers

I. COURSE DESCRIPTION

VIST 354. Principles of Multimedia Design. Credits 3. 2 Lecture Hours. 3 Lab Hours.

Application and design of web and mobile platforms to create interactive products; planning, design, and development of intuitive user interfaces; focus on user-centered design, interaction principles, and standards-based technologies.

Prerequisite: VIST 271 or ARTS 303.

II. INTRODUCTION

VIST 354 is a course that emphasizes the creative and compositional aspects of web design. The tutorials and project will provide the technical tools needed to bring the design ideas to fruition. The growing area of internet usage is mobile (phone) and tablet (iPad type device); as such most of the designs will want “mobile” design as well as “normal” computer screen presentation. In order to adequately “test” your mobile presentations, many of your Web projects will need to be “published” on a server. Fortunately, Texas A&M provides this service to every student through people.tamu.edu.

Topics include the Internet and the web, terminology, HTML-5 document type definition and standards, web browser technologies. Basic concepts of web design (controlling page real estate) will be addressed using HTML-5 and CSS (cascading style sheets) especially new advances using CSS3. ADA accessibility standards and the building and management of complete web sites will also be addressed.

The work will be done on the student’s own laptop computer although public computer labs may be used. No special software is required; GOOD (excellent) editors are available for both PC and MAC that are in the public domain (TextWrangler for the MAC or Notepad++ for the PC – Sublime Text is a really fine color available for both PC and MAC). Occasionally images may need to be manipulated; PhotoShop (available in all the public labs) is the recommended tool.

It is good to have a number of different browsers available; webkit (Safari and Chrome) are the most compatible browsers although Firefox is a second; IE (PC
default browser) is the least compatible, the new Edge browser comes with Windows 10 and looks to have great promise.

III. LEARNING OUTCOMES

By the conclusion of this semester, students will be able to:
1. Apply good coding practices through the use of web standards.
2. Design visual layouts for a variety of content that meets standards for display on both computer and mobile devices.
3. Differentiate between content and format styling in the organization for the creation of a visual layout.
4. Apply ADA standards to a project created for mobile devices.
5. Apply site management principles to the content created for a mobile device based project.
6. Design layouts that incorporate a variety of media including audio and animation.

Departmental Learning Outcomes

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Weave Assessment Learning Objectives

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<td>To Strengthen Ethical Behavior</td>
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<tr>
<td>To Improve Personal Responsibility</td>
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</table>
IV. CONTACT INFORMATION

Howard F. Eilers
104-A Langford C
979-229-5578
h-eilers@tamu.edu
Office hours: MW 11:45-2:45, T12-2, R-8:15-2, F - TBA

V. COURSE TOPICS AND CALENDAR

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<th>Week</th>
<th>Topic</th>
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<tr>
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<td>Principles of HTML</td>
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<td>3</td>
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<td>Layout: Absolute Positioning (AP)</td>
<td>Assignment 2 Due</td>
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<td>Layout: Fluid (liquid)</td>
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<td>6</td>
<td>Layout: Mobile</td>
<td>Assignment 4 Due</td>
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<td>7</td>
<td>Design using Flexbox</td>
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<td>8</td>
<td>Responsive web design</td>
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<td>9</td>
<td>Transformations/Transitions</td>
<td>Assignment 5 Due</td>
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<td>10</td>
<td>Navigation: drop-downs and button design</td>
<td>Assignment 6 Due</td>
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<td>11</td>
<td>UX/UI: Creating a complete web site using native video, animation &amp; tooltips</td>
<td>Assignment 7 Due</td>
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<tr>
<td>12</td>
<td>CSS Zengarden – (major project)</td>
<td>Project Review</td>
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<tr>
<td>13</td>
<td>Review CSS Zengarden/Work on web site final project</td>
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<tr>
<td>14</td>
<td>Work on web site final project</td>
<td>Final Review</td>
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VI. GRADING AND EVALUATION:

Projects/Tutorials for the Course

Principles HTML:
Web Pages – Create web pages incorporating shape layout, color and design techniques designed in class. Include text, still images, sound and video. Link more than one page together. Create graphics for inclusion in basic web pages.
Styling – Interface design:
A series of exercises and creative projects to style web pages with multi-column layouts, floats, various link (menu) configurations, incorporating different design, layout (fixed column and fluid/elastic), imagery, typography, and special effects using background images, transparency and layering.

Content integration:

Web site and management: Create and publish a web site applying strategies integral to the corporation.

Grading
Assignments 60%
CSS Zengarden 10%
Final web site 20%
Class Participation 10%

Late work Submit all assignments before 11:59 PM (unless otherwise noted) on the day they are due. Penalties for work submitted after day and time it is due are the following:
   Within one week – 10 points
   Between one week and two weeks – 15 points
   More than two weeks – 20 points
   More than three weeks – 30 points

Points will be taken off after work is graded. You are responsible for submitting work correctly.

End of semester numerical grades will be converted to a letter grade according to the following:
   A: >= 90 <=100
   B: >= 80 < 90
   C: >= 70 < 80
   D: >= 60 < 70
   F: < 60

Attendance: The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/.

Make-up Policy: If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university
excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.

VII. REQUIRED MATERIALS/TEXT

No special materials are required for this course beyond those required for note taking.

TEXT: No text is required for this course.

REFERENCES: Listed below are a number of useful texts and guides that can be beneficial in this course.

Boem, Anne and Ruvalcaba, Zak murach’s HTML 5 and CSS 3, 3rd edition Mike Murach & Associates, Inc. 2015
Cederholm Dan CSS 3 for Web Designers A Book Apart 2015
Marcotte, Ethan Responsive Web Design A Book Apart 2014
Smashing Book 5 Real-Life Responsive Web Design Smashing Magazine GmbH 2015
Krug, Steve Don’t Make Me Think New Riders 2014
Shay Howe Learn to Code HTML & CSS New Riders 2014
Wyke-Smith Visual Stylin’ with CSS3, Kindle 2013
Kadlec, Tim Implementing Responsive Design 2012 Voices that Matter
Clarke, Andy and Holzschlag, Molly Transcending CSS: The Fine Art of Web Design New Riders 2006
Shea, Dave and Holzschlag, Molly the Zen of CSS design: visual enlightenment for the web New Riders 2005
Clarke, Andy Design Master Class New Riders 2008
Cederholm, Dan; Marcotte, Ethan; Handcrafted CSS: More Bulletproof Web design New Riders 2009
Clarke, Andy Hardboiled Web Design, Five Simple Steps 2010
Adams, Cameron; Boulton, Mark; Clarke, Andy; Collison, Simon; Croft, Jeff; Featherstone, Derek; Lloyd, Ian; Marcotte, Ethan; Rubin, Dan; Weychert, Rob, Web Standards Creativity: Innovations in Web Design with XHTML, CSS, and DOM Scripting Friends of Ed 2007

Anderson, Stephen Seductive Interactive Design New Riders 2011

McNeil, Patrick The Web Designer’s Idea Book vol2 HOW books 2010

Ward, Matt The Smashing Book #2 Smashing Media GmbH 2011

VIII. COSTS

Beyond the suggested books, the only costs will be for backup media. Blank CDs or a memory “key” is convenient and recommended with a cost between $10 and $30. CD-ROM and DVD burners are available. Media costs between a few cents to a few dollars each.

IX. ADDITIONAL INFORMATION

Americans with Disabilities Act (ADA) Policy Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

Plagiarism: In this course, we want to encourage collaboration and the free interchange of ideas among students and in particular the discussion of reading and writing assignments and review questions, approaches to solving them, etc. However, we do not allow plagiarism, which, as commonly defined, consists of passing off as one's own the ideas, words, writings, etc. that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one form of scholastic dishonesty. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section on Scholastic Dishonesty.

Aggie Honor Code:

“An Aggie does not lie, cheat or steal or tolerate those who do”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers and other
academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules.

**Defacement of Property:** "It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)"

The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 10/20/17 9:31 am
Viewing: VIST 357: Interaction Design
Last edit: 10/20/17 11:17 am
Changes proposed by: traciz

Programs referencing this course: BS-VIST: Visualization - BS

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
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</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@viz.tamu.edu">trl@viz.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
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Course prefix: VIST  
Course number: 357

Department: Visualization  
College/School: Architecture  
Academic Level: Undergraduate

Undergraduate course level justification (Select One)

Prerequisites:

All prerequisites will be enforced through COMPASS.

Academic Level: Graduate

Effective term: 2018-2019

Complete Course Title: Interaction Design

Abbreviated Course Title: INTERACTION DESIGN

Catalog course description:
Concepts, theories and methods in interaction design and interaction; dimensions of interaction design; data gathering methods and evaluation; task analysis; aesthetics and the sensory experience; prototyping, and workflow.

Prerequisites and Restrictions:

Upper division in Visualization.

Concurrent Enrollment: No

Should catalog prerequisites/concurrent enrollment be enforced:

No

Crosslistings: No  
Crosslisted With:

In Workflow:
1. VIZA Department Comm Chair
2. VIZA Department Head
3. Curricular Services Review
4. AR Committee Preparer
5. AR Committee Chair
6. AR College Dean
7. UCC Preparer
8. UCC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path:
1. 10/20/17 9:39 am  
   Terry Larsen (t-larsen): Approved for VIZA Department Comm Chair

2. 10/20/17 10:05 am  
   Tim McLaughlin (timm): Approved for VIZA Department Head

3. 10/20/17 11:18 am  
   Sandra Williams (sandra-williams): Approved for Curricular Services Review

4. 10/20/17 1:27 pm  
   Ann Broussard (ambroussard): Approved for AR Committee Preparer

5. 10/24/17 3:03 pm  
   Leslie Feigenbaum (l-feigenbaum): Approved for AR Committee Chair

6. 10/24/17 3:32 pm  
   Leslie Feigenbaum (l-feigenbaum): Approved for AR College Dean

7. 11/13/17 6:26 pm  
   Sandra Williams (sandra-williams): Approved for UCC Preparer

8. 12/04/17 4:03 pm  
   Sandra Williams (sandra-williams): Approved for UCC Chair

https://nextcatalog.tamu.edu/courseleaf/approve#
Semester: 3  
Credit Hour(s): 3  
Contact Hour(s): Lecture: 3  
Lab: 0  
Other: 0  
Total: 3  

Repeatable for credit?: No  
Three-peat?: No  
CIP/Fund Code: 3031010003  
Default Grade Mode: Letter Grade(G)  
Alternate Grade Modes: Satisfactory/Unsatisfactory  
Method of instruction: Lecture  
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No  
Will this course be taught as a distance education course?: No  
Is 100% of this course going to be taught in Texas?: Yes  
Will classroom space be needed for this course?: Yes  
This will be a required course or an elective course for the following programs:  
Required (select program)  
Elective (select program)  

Has/will this course be(en) submitted for core curriculum consideration?: No  
Has/will this course be(en) submitted for Writing or Communication consideration?: No  
Has/will this course be(en) submitted for ICD consideration?: No

Course Syllabus

Syllabus: Upload syllabus  
Upload syllabus: vist357interactionDesign.docx

https://nextcatalog.tamu.edu/courseleaf/approve#
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<td>Reviewer Comments</td>
<td>Sandra Williams (sandra-williams) (12/04/17 4:03 pm): UCC approved in December.</td>
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<td>Reported to state?</td>
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I. COURSE DESCRIPTION

VIST 357  Interaction Design. Credits 3.  3 Lecture Hours.

Concepts, theories and methods in interaction design and interaction; dimensions of interaction design; data gathering methods and evaluation; task analysis; aesthetics and the sensory experience; prototyping, and workflow.

Prerequisite: Upper Division in Visualization.

II. INTRODUCTION

The art and science of interaction design deals with the design, development, evaluation and use of interactive devices and services. The success of products relies heavily on how well they are adapted to users' abilities, needs and desires. This course is an introduction to key concepts, theories and methods in interaction design and the interaction with the physical world man creates. Students are expected to be familiar with software useful in Visualization such as InDesign or Photoshop in order to evaluate aspects of the user experience.

III. LEARNING OUTCOMES

By the end of the semester, the student will be able to:

1. Describe the key theories and concepts useful in interaction design.
2. Evaluate devices and services based upon the principles and theories of interaction design.
3. Design an interactive experience that meets a specified set of criteria.
4. Create a variety of visual diagrams to describe the interaction experience.
5. Apply interaction design concepts, methodologies and workflow in the development of a prototype.
Departmental Learning Outcomes

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Teamwork

Personal Responsibility

Social Responsibility

Weave Assessment Learning Objectives

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<tr>
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IV. CONTACT INFORMATION

Sharon Lyn Chu
Office: Langford A128
Office Hours: TBA
Email: sharilyn@tamu.edu

V. COURSE TOPICS AND CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Assignment</th>
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<tr>
<td>1.1</td>
<td>Introduction and overview of Interaction design</td>
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<tr>
<td>1.2</td>
<td>What is Interaction Design? History &amp; elements of IxD</td>
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| 2.1  | IxD Process Models; Criteria & usability |
| 2.2  | IxD Criteria; Agile Methodology; The User Experience |
3.1 Gathering User Needs; The problem space, Methods of data gathering
Reflection paper # 1
3.2 Gathering User Needs; Methods of data gathering continued

4.1 Establishing Requirements; Overview; Personas, Scenarios
Reflection Paper # 2
4.2 Establishing requirements; Task analysis; Use cases

5.1 Conceptualizing Interaction; Interactivity, Interaction concepts: Mental models
5.2 Conceptualizing Interaction; Interactivity Concepts: Affordances, Mappings, Constraints, Visibility
Paper # 2

6.1 Conceptualizing Interaction; Interactivity Concepts: Interface metaphors, Consistency
Reflection Paper # 3A
6.2 Affinity Diagramming Exercises
Reflectionaper # 3B

7.1 The ‘Create” Phase: Synthesis, Visioning, Ideation, Prototyping and Feedback
7.2 Dr. Janet Read’s Presentation: Visualization Project: Requirements

8.1 Dr. Janet Read’s Presentation: Education
8.2 Dynamic Prototyping Project:
Mockups/Paper
Prototype

9.1 Spring Break
9.2 Spring Break

10.1 Quiz #1
10.2 Project Presentations I (2 groups)

11.1 Project Presentations I (3 groups)
11.2 Practice vs Research in Interaction Design

12.1 Evaluation Methods Project: Int./ Dyn.Prototypes
12.2 Quantitative Evaluation Methods for IxD

13.1 Quantitative Data Analysis Reflection Paper # 4
13.2 Qualitative Data Analysis
VI. GRADING AND EVALUATION:

Students’ performance in the course will be determined based on the following:

1. Class attendance and online participation [10%]
2. Reflection papers [20%]
3. Mid-semester quiz [10%]
4. End-of-semester quiz [15%]
5. Group project [Project proposal: 5% + Design: 10% + Prototype: 15% + Written report: 15%] = 45%

To be able to participate in the class discussions effectively, students are expected to read all assigned readings and come to class prepared.

Final letter grades for the course will be converted according to the following scale:

90-100 = A
80-89.999 = B
70-79.999 = C
60-69.999 = D
0-59.999 = F

Attendance: The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/.

Make-up Policy: If an absence is excused, the instructor will either provide the student an opportunity to make up any quiz, exam or other work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a timeframe not to exceed 30 calendar days from the last day of the initial absence.

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and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.

VII. TEXT BOOK

The class will use the following textbooks:


Other readings may be assigned from other sources (e.g., research papers, magazine articles, etc.).

VIII. COSTS

No additional costs are anticipated for this course beyond the texts mentioned above.

IX. ADDITIONAL INFORMATION

**Americans with Disabilities Act (ADA) Policy Statement**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Plagiarism:** In this course, we want to encourage collaboration and the free interchange of ideas among students and in particular the discussion of reading and writing assignments and review questions, approaches to solving them, etc. However, we do not allow plagiarism, which, as commonly defined, consists of passing off as one’s own the ideas, words, writings, etc. that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one form of scholastic dishonesty. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section on Scholastic Dishonesty.
**Aggie Honor Code:**

“An Aggie does not lie, cheat or steal or tolerate those who do”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: [http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules](http://aggiehonor.tamu.edu/Rules-and-Procedures/Rules/Honor-System-Rules).

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The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.
Course Change Request

New Course Proposal

Date Submitted: 10/18/17 7:42 am

Viewing: VIST 476 : Data Visualization
Also Known As: CSCE 447
Last edit: 10/24/17 3:18 pm
Changes proposed by: traci

Programs referencing this course

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@viz.tamu.edu">trl@viz.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
</tbody>
</table>

Course prefix  VIST  Course number  476
Department  Visualization
College/School  Architecture
Academic Level  Undergraduate
Undergraduate course level justification (Select One)
Prerequisites
All prerequisites will be enforced through COMPASS.

Effective term  2018-2019
Complete Course Title  Data Visualization
Abbreviated Course Title  DATA VISUALIZATION

Catalog course description
Visual representation and design of data and information; 3D visualization, infographics, data narratives, principles of visual data encoding and interaction techniques.

Prerequisites and Restrictions
Grade of C or better in VIST 271, or CSCE 221, or CSCE 441.

Concurrent Enrollment  No
Should catalog prerequisites / concurrent enrollment be enforced?  Yes

In Workflow
1. VIZA Department Comm Chair
2. VIZA Department Head
3. CSCE Department Head
4. Curricular Services Review
5. AR Committee Preparer
6. AR Committee Chair
7. AR College Dean
8. UCC Preparer
9. UCC Chair
10. Faculty Senate Preparer
11. Faculty Senate
12. Provost II
13. President
14. Curricular Services
15. Banner

Approval Path
1. 10/18/17 8:57 am Terry Larsen [t-larsen]: Approved for VIZA Department Comm Chair
2. 10/19/17 12:42 pm Tim McLaughlin [timml]: Approved for VIZA Department Head
3. 10/23/17 8:37 am Scott Schaefer [schafer]: Approved for CSCE Department Head
4. 10/23/17 9:44 am Sandra Williams [sandra-williams]: Approved for Curricular Services Review
5. 10/23/17 10:30 am Ann Broussard [ambroussard]: Approved for AR Committee Preparer
6. 10/24/17 3:15 pm Leslie Feigenbaum [l-feigenbaum]: Approved for AR Committee Chair
7. 10/24/17 3:32 pm Leslie Feigenbaum [l-feigenbaum]: Approved for AR College Dean
8. 11/13/17 6:26 pm Sandra Williams [sandra-williams]:

https://nextcatalog.tamu.edu/courseleaf/approve#
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VIST 271</td>
<td>C</td>
<td>UG</td>
<td></td>
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<tr>
<td>Or</td>
<td>CSCE 221</td>
<td>C</td>
<td>UG</td>
<td></td>
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<tr>
<td>Or</td>
<td>CSCE 441</td>
<td>C</td>
<td>UG</td>
<td></td>
</tr>
</tbody>
</table>

Crosslistings: Yes
Crosslisted With: CSCE 447
Stacked: Yes
Stacked with: VIZA 676 - Data Visualization

Semester: 3
Credit Hour(s): Contact Hour(s) (per week):
Lecture: 3
Lab: 0
Other: 0
Total: 3

Repeatable for credit? No
CIP/Fund Code: 1101040019
Default Grade Mode: Letter Grade (G)
Method of instruction: Lecture
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

Will this course be taught as a distance education course? No
Is 100% of this course going to be taught in Texas? Yes
Will classroom space be needed for this course? Yes

This will be a required course or an elective course for the following programs:

**Required (select program)**

<table>
<thead>
<tr>
<th>Program(s)</th>
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</thead>
<tbody>
<tr>
<td>(BS-VIST) Visualization - BS</td>
</tr>
<tr>
<td>(BS-CPSC) Computer Science - BS</td>
</tr>
<tr>
<td>(BS-CECN) Computer Engineering - BS, Computer Science Track</td>
</tr>
</tbody>
</table>

**Elective (select program)**

Has/will this course be (en) submitted for core curriculum consideration? No
Has/will this course be(en) submitted for Writing or Communication consideration? No

Has/will this course be(en) submitted for ICD consideration? No

---

**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus: vist476dataVisualization_1.docx

Letters of support or other documentation: No

Additional information: Added cross-listed course to syllabus.

It is stacked with VIZA 676, which is also a new course. And cross-listed with CCE 447/679, which are also new courses.

The difference in UG and GR grading is:

- Different homework assignments
- Different exam formats
- Higher expectations for project outcomes for graduate section

Reviewer Comments:

Sandra Williams (sandra-williams) [09/25/17 3:57 pm]: Rollback: Updates needed: syllabus has old ADA statement (Cain Hall) and wrong Aggie Honor Code website link.

Sandra Williams (sandra-williams) [09/27/17 4:54 pm]: Update received.

Sandra Williams (sandra-williams) [09/27/17 4:57 pm]: Edits made to the enforced prerequisite table to comply with the updated catalog prerequisites.

Sandra Williams (sandra-williams) [09/27/17 5:14 pm]: Rollback: Additional comments.

Sandra Williams (sandra-williams) [09/27/17 5:16 pm]: Rollback: Form shows course is stacked, on the syllabus, what is the difference in grading for UG and GR courses?

Sandra Williams (sandra-williams) [10/02/17 5:09 pm]: Rollback: If the course is stacked, as indicated on the minimum syllabus requirements, the syllabus must clearly indicate the additional work required for graduate students. The syllabus must have this information, not the field on the form titled "Additional Information". Please reference: http://registrat.tamu.edu/Our-Services/Curricular-Services/Curricular-Approvals/Course-Approvals#1-MinimumSyllabusRequirements

Scott Schaefer (schaefer) [10/17/17 10:58 am]: Rollback: fix csce cross-list

Sandra Williams (sandra-williams) [10/17/17 9:47 pm]: Rollback: Syllabus doesn't show cross-listed number.

Sandra Williams (sandra-williams) [10/23/17 9:42 am]: Update received.

Sandra Williams (sandra-williams) [12/04/17 4:04 pm]: UCC approved in December.

Key: 18113
I. COURSE DESCRIPTION

**VIST 476 Data Visualization. Credit Hours 3. 3 Lecture Hours.**

Visual representation and design of data and information; 3D visualization, infographics, data narratives, principles of visual data encoding, and interaction techniques.

**Prerequisites:** VIST 271 or CSCE 221 or CSCE 441.

**Cross-listed:** CSCE 447.

II. INTRODUCTION

This course covers the visual representations that facilitate human understanding of data. Data visualization includes simple charts, complex applications, aesthetic infographics, and interactive tools that allow the exploration, inspection, analysis, and interpretation of data. This course covers the foundational principles of data visualization and provides a hands-on experience in design and evaluation. Topics include abstract data visualization, homework, exams, and quizzes. The final grade (after applying weights) will be truncated to the nearest whole number to data visualization, 3D visualization, infographics, data narratives, principles of visual data encoding, and interaction techniques.

This course involves the use and development of software for data visualization. Students are expected to have experience with computer programming prior to taking this course. Most introductory programming courses should provide satisfactory preparation for this course, but students who are uncertain of the expected level of technical proficiency are encouraged to contact the instructor to discuss specifics. Experience with graphical and visualization tools, frameworks, and libraries (e.g., D3.js, Unity, Processing, OpenGL) is not required, but would be beneficial. Familiarity with concepts of
human-computer interaction, aesthetic design, and mathematical functions is also recommended but not required.

III. LEARNING OUTCOMES OR COURSE OBJECTIVES

By the end of this course, students will be able to:
1. Apply principles of visual encoding for data visualization.
2. Evaluate and apply existing information visualization designs and tools.
3. Identify and explain deceptive information visualizations.
4. Analyze and assess appropriate visualizations for different data types and analysis goals.
5. Design and program a data visualization or evaluation tool.

Departmental Learning Outcomes

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td></td>
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<tr>
<td>Teamwork</td>
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<tr>
<td>Personal Responsibility</td>
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<tr>
<td>Social Responsibility</td>
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</tbody>
</table>

Weave Assessment Learning Objectives

<table>
<thead>
<tr>
<th>Stimulate Visual Thinking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurture Design Skills</td>
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<tr>
<td>Enhance Multidisciplinary Focus</td>
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<tr>
<td>Encourage Collaborative Behavior</td>
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<tr>
<td>Strengthen Ethical Behavior</td>
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<tr>
<td>Improve Personal Responsibility</td>
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<td></td>
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</tr>
</tbody>
</table>

IV. CONTACT INFORMATION

Eric Ragan
Email: eragan@tamu.edu
Office Hours: TBD. Please email to confirm an appointment
Office Location: Langford A-136
V. COURSE TOPICS AND CALENDAR

Class attendance is expected. Students should report any known future absences at least one week prior to the absence. Any graded class activities missed (e.g., quizzes, exams, presentations, homework submissions) during unapproved absences cannot be made up without the instructor’s prior approval and a valid excuse. The below schedule is tentative and may change (notice will be given if changes are made).

<table>
<thead>
<tr>
<th>Tuesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 17 Syllabus and overview</td>
<td>Jan. 19 Foundations, basic charts, and applications</td>
</tr>
<tr>
<td></td>
<td>Paper summary overview, project overview</td>
</tr>
<tr>
<td>Jan. 24 Deception, lies, and junk</td>
<td>Jan. 26 Evaluation approach overview</td>
</tr>
<tr>
<td>Storytelling and infographics</td>
<td>Project introduction</td>
</tr>
<tr>
<td><strong>HW:</strong> Cereal</td>
<td><strong>HW Papers:</strong> Overview</td>
</tr>
<tr>
<td>Jan. 31 D3.js</td>
<td>Feb. 2 D3.js</td>
</tr>
<tr>
<td></td>
<td><strong>HW:</strong> D3 #1</td>
</tr>
<tr>
<td>Feb. 7 D3.js</td>
<td>Feb. 9 Multidimensional data</td>
</tr>
<tr>
<td>Project development</td>
<td><strong>HW Papers:</strong> Narrative and embellishment</td>
</tr>
<tr>
<td><strong>HW:</strong> Project plan</td>
<td></td>
</tr>
<tr>
<td>Feb. 14 Interaction</td>
<td>Feb. 16 Graphs and networks</td>
</tr>
<tr>
<td><strong>HW:</strong> D3 #2</td>
<td></td>
</tr>
<tr>
<td>Feb. 21 Hierarchical data</td>
<td>Feb. 23 Time</td>
</tr>
<tr>
<td><strong>HW:</strong> Project literature</td>
<td><strong>HW Papers:</strong> Space and time</td>
</tr>
<tr>
<td>Feb. 28 Catch up and review</td>
<td>Mar. 2 <strong>Midterm Exam</strong></td>
</tr>
<tr>
<td></td>
<td>Mar. 9 <strong>Project early review and demo</strong></td>
</tr>
<tr>
<td>Mar. 7 Project development and informal review</td>
<td><strong>HW Papers:</strong> Humans and sensemaking</td>
</tr>
<tr>
<td></td>
<td>Mar. 14 Break - No class</td>
</tr>
<tr>
<td></td>
<td>Mar. 16 Break - No class</td>
</tr>
<tr>
<td>Mar. 21 Special topics</td>
<td>Mar. 23 3D visualization and volume</td>
</tr>
<tr>
<td><strong>HW:</strong> Project preliminary report</td>
<td><strong>HW Papers:</strong> SciVis</td>
</tr>
<tr>
<td></td>
<td>Mar. 28 Text and documents</td>
</tr>
<tr>
<td>Apr. 4 Statistical graphics</td>
<td>Mar. 30 Big data overview</td>
</tr>
<tr>
<td><strong>HW:</strong> Movies 1</td>
<td><strong>HW Papers:</strong> Text</td>
</tr>
<tr>
<td>Apr. 11 Maps and space</td>
<td>Apr. 6 <strong>Project review and demos</strong></td>
</tr>
<tr>
<td>Apr. 18 Review</td>
<td>Apr. 13 Design critique and classification</td>
</tr>
<tr>
<td><strong>HW:</strong> Movies 2</td>
<td><strong>HW Papers:</strong> Cyber</td>
</tr>
<tr>
<td>Apr. 25</td>
<td>Apr. 20 <strong>Project presentations</strong></td>
</tr>
<tr>
<td></td>
<td>Apr. 27</td>
</tr>
</tbody>
</table>
VI. GRADING AND EVALUATION:

Course grades will be calculated based on a combination of weighted scores for projects, homework, exams, and quizzes. The final grade (after applying weights) will be truncated to the nearest whole number to determine the letter grade.

<table>
<thead>
<tr>
<th>Evaluation Weights</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project: 30%</td>
<td>A: &gt;= 90 &lt;= 100%</td>
</tr>
<tr>
<td>Research Papers (3): 20%</td>
<td>B: &gt;= 80 &lt; 90%</td>
</tr>
<tr>
<td>Programs &amp; exercises (5): 20%</td>
<td>C: &gt;= 70 &lt; 80%</td>
</tr>
<tr>
<td>Exams: 20%</td>
<td>D: &gt;= 60 &lt; 70%</td>
</tr>
<tr>
<td>Participation/Quizzes: 10%</td>
<td>F: &lt; 60%</td>
</tr>
</tbody>
</table>

**Project (30% of final grade)**

Students will work in teams to complete a semester-long project involving the design, creation, and evaluation of data visualizations. Projects will provide students with opportunities to prototype creative visualizations and gain experience with research methods. More detail on possible project concepts and expectations will be given in class. Early in the semester, teams will decide on project goals and develop an execution plan to be approved or revised by the instructor, and students will be expected to provide status updates and demonstrations throughout the class. Final project deliverables will include:

1. A brief oral presentation of the project goals and accomplishments
2. A live online demonstration of the project software/outcomes
3. A brief video (maximum 3 minutes) demonstrating the visualization, design, and novelty of the work
4. A document explaining the project’s purpose, the rationale for the visualization approach, the visualization, and the results of any evaluation.
5. A document summarizing each team member’s contributions to the project.

For all but the last of the listed deliverables, each team is expected to work together to produce a single deliverable. For example, each team will submit one document and create one video (rather than
multiple individual submissions). However, every student is expected to submit a separate summary of contributions explaining how each team member contributed to the project.

**Expectations will be higher for project outcomes for students enrolled in the graduate sections of the course. The level of quality, innovation, and professionalism for all project deliverables will be graded more strictly.**

**Research Papers (20% of final grade)**
Papers will be required as the course progresses which will require the student to research a particular topic that goes beyond the content in the course lectures. Topics will be discussed as the course progresses. Unless otherwise stated, papers must be submitted before class on the given deadline to be eligible for full credit. Students can submit an assignment one day late to earn up to 75% of the assignment total; otherwise, a score of zero will be earned.

**Programs and exercises (20% of final grade)**
Short programs and exercises will be given to emphasize important concepts and techniques useful in virtual reality app development. Students can submit a program or exercise one day late to earn up to 50% of the assignment total; otherwise, a score of zero will be earned.

Each student may have one submission dropped from consideration at the end of the semester. However, a reasonable attempt at the assignment must be submitted in order for it to be eligible to be dropped from consideration. A minimum score of 40% is expected to be considered a valid attempt. Students cannot drop an assignment that they do not submit; a score of zero cannot be dropped. In other words, each student’s assignment with the lowest score (of at least 40%) will not negatively affect the total homework score.

**Exams (20% of final grade)**
Up to two exams will be administered in class (a midterm exam and a final exam). The formats of these exams will be described prior to exam days. **Note that graduate and undergraduate sections have different exam formats.**

**Participation/Quizzes (10% of final grade)**
Class participation is expected, and failure to attend classes or participate in class discussions will result in lost participation points. Occasional daily attendance checks or participation points will be valued the same as quizzes. On some days, short quizzes or
assignments will be administered in class. Quiz days will be announced ahead of time either during class or by email (in other words, these are not surprise or “pop” quizzes). The topic of each quiz or instructions for preparation will also be announced ahead of time. Quizzes are designed to be short, and each usually consists of a single question or exercise. A time limit will be provided for each quiz (typically, five minutes). Students must be present at the start of the quiz to be eligible to participate; otherwise, a score of zero will be earned.

**Extra Assignments (extra credit)**
Opportunities to earn extra credit are not promised, but the instructor may opt to offer supplemental assignments for extra credit. Details will be determined per assignment and must be agreed upon by both the instructor and the student.

**Attendance**: The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at [http://student-rules.tamu.edu/](http://student-rules.tamu.edu/).

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**VII. REQUIRED MATERIALS/TEXT**

There is no required textbook for the class, but reading assignments will be given from online university resources or publically available content. Supplemental reading is recommended from the listed books.
Recommended Texts:

VIII. COSTS

No additional costs are expected for this course.

IX. ADDITIONAL INFORMATION

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**Copyright:** The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, lab problems, in-class materials, review sheets and additional problem sets and the contents of the class Web site. Because these materials are copyrighted, you do not have the right to copy the handouts, unless you are expressly granted permission. You have permission to make printouts of the on-line class notes and the class web site strictly for your use in this class.

**Plagiarism:** In this course, students are responsible for their own work, and credit must be given for external resources or assistance from others. Sharing or adopting the work of others (including, but not limited to, writing, code, and ideas) without providing proper credit can be interpreted as cheating or plagiarism. However, targeted discussion and collaboration with other students is encouraged in this course. Discussion of topics, design concepts, research philosophies, and implementation approaches is recommended to help elicit new ideas, improve understanding, and achieve a broader range of
Therefore, helping other students is acceptable and appreciated so long as any given assistance does not inhibit others from doing their own work and achieving assignment objectives for themselves. Use your best judgment and be mindful of the university integrity policies.

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Course Change Request

New Course Proposal

Date Submitted: 10/18/17 7:44 am

Viewing: **VIST 477 : Virtual Reality**
Also Known As: CSCE 446
Last edit: 10/23/17 9:50 am
Changes proposed by: traciz

Programs referencing this course

- BS-VIST: Visualization

Faculty Senate Number

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
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<th>Phone</th>
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</thead>
<tbody>
<tr>
<td>Terry Larsen</td>
<td><a href="mailto:trl@viz.tamu.edu">trl@viz.tamu.edu</a></td>
<td>979-845-3465</td>
</tr>
</tbody>
</table>

Course prefix VIST  
Course number 477

Department Visualization
College/School Architecture
Academic Level Undergraduate
Undergraduate course level justification (Select One)
- Prerequisites

All prerequisites will be enforced through COMPASS.

Academic Level (alternate) Graduate
Effective term 2018-2019
Complete Course Title Virtual Reality
Abbreviated Course Title VIRTUAL REALITY

Catalog course description
Theory and practice of virtual reality; interactive 3D virtual environments; input/output devices, 3D interaction techniques, augmented reality, role of realism in VR, navigation techniques, design guidelines and evaluation methods.

Prerequisites and Restrictions
Grade of C or better in VIST 271, CSCE 221, or CSCE 441.
Concurrent Enrollment No
Should catalog prerequisites / concurrent enrollment be enforced? Yes

In Workflow
1. VIZA Department Comm Chair
2. VIZA Department Head
3. CSCE Department Head
4. Curricular Services Review
5. AR Committee Preparer
6. AR Committee Chair
7. AR College Dean
8. UCC Preparer
9. UCC Chair
10. Faculty Senate Preparer
11. Faculty Senate
12. Provost II
13. President
14. Curricular Services
15. Banner

Approval Path
1. 10/18/17 8:57 am  
   Terry Larsen (tlarsen): Approved for VIZA Department Comm Chair
2. 10/19/17 12:41 pm  
   Tim McAuliffe (timm): Approved for VIZA Department Head
3. 10/23/17 8:37 am  
   Scott Schaefer (schaefer): Approved for CSCE Department Head
4. 10/23/17 9:50 am  
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
5. 10/23/17 10:30 am  
   Ann Broussard (ambroussard): Approved for AR Committee Preparer
6. 10/24/17 3:20 pm  
   Leslie Feigenbaum (lfeigenbaum): Approved for AR Committee Chair
7. 10/30/17 9:06 pm  
   Leslie Feigenbaum (lfeigenbaum): Approved for AR College Dean
8. 11/13/17 6:26 pm  
   Sandra Williams (sandra-williams):
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
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<tbody>
<tr>
<td></td>
<td>VIST 271</td>
<td>C</td>
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<tr>
<td>Or</td>
<td>CSCE 221</td>
<td>C</td>
<td>UG</td>
<td></td>
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<tr>
<td>Or</td>
<td>CSCE 441</td>
<td>C</td>
<td>UG</td>
<td></td>
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</tbody>
</table>

Crosslistings: Yes
Crosslisted With: CSCE 446
Stacked: Yes
Stacked with: VIZA 677 - Virtual Reality

Semester: 3
Credit Hour(s): Contact Hour(s) (per week):
Lecture: 3
Lab: 0
Other: 0
Total: 3

Repeatable for credit?: No
Three-peat?: No
CIP/Fund Code: 1108040019
Default Grade Mode: Letter Grade(G)
Alternate Grade Modes: Satisfactory/Unsatisfactory
Method of instruction: Lecture
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education): No

Will this course be taught as a distance education course?: No
Is 100% of this course going to be taught in Texas?: Yes
Will classroom space be needed for this course?: Yes

This will be a required course or an elective course for the following programs:
Required (select program)

Elective (select program)

Program(s)
(85-VIST) Visualization - BS

Has/will this course be(en) submitted for core curriculum consideration?: No
Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: vist477VirtualReality_2.docx

Letters of support or other documentation: No

Additional information: Added cross-listed course to syllabus.

This course will be stacked with VIZA 677, which is also a new course. Also cross-listed with CSCE 446/650, which are also new courses.

The difference in UG and GR is the following:
- Different homework assignments
- Different exam formats
- Higher expectations for project outcomes for graduate section

Reviewer Comments:
Sandra Williams [sandra-williams] (09/25/17 3:59 pm): Rollback: Updates required: form needs the enforced prerequisite table completed and if a grade of C is required for prerequisites, you need to add a statement to the catalog prerequisites; syllabus shows old ADA statement (Cain Hall) and wrong Aggie Honor Code website link.

Sandra Williams [sandra-williams] (09/27/17 4:58 pm): Edits made to the enforced prerequisite table to comply with the updated catalog prerequisites. Update received.

Sandra Williams [sandra-williams] (09/27/17 5:01 pm): Rollback: Form shows course is stacked, on the syllabus, what is the difference in grading for UG and GR courses?

Sandra Williams [sandra-williams] (10/02/17 5:11 pm): Rollback: If the course is stacked, as indicated on the minimum syllabus requirements, the syllabus must clearly indicate the additional work required for graduate students. The syllabus must have this information, not the field on the form titled "Additional Information". Please reference: http://registrar.tamu.edu/Our-Services/Curricular-Services/Curricular-Approvals/Course-Approvals#1-MinimumSyllabusRequirements

Scott Schaefer [schaefer] (10/17/17 10:59 am): Rollback: fix csce cross-list

Sandra Williams [sandra-williams] (10/17/17 9:49 pm): Rollback: Syllabus needs to show cross-listed course numbers (ex., VIST 477/CSCE 446).


Sandra Williams [sandra-williams] (12/04/17 4:04 pm): UCC approved in December.

Reported to state: Add
I. COURSE DESCRIPTION

VIST 477 Virtual Reality.  Credit Hours 3.  3 Lecture Hours.

Theory and practice of virtual reality; interactive 3D virtual environments; input/output devices, 3D interaction techniques, augmented reality, role of realism in VR, navigation techniques, design guidelines, and evaluation methods.

Prerequisites: VIST 271 or CSCE 221 or CSCE 441.
Cross-listed: CSCE 446.

II. INTRODUCTION

This course covers the theory and practice of virtual reality (VR). Virtual reality includes interactive 3D virtual environments that take advantage of immersive technology to provide enhanced perceptual realism and an embodied interaction experience. The course aims to provide an overview of VR with topics including input devices, output devices, 3D interaction techniques, augmented reality, the role of realism in VR, navigation techniques, design guidelines, and evaluation methods. Student will gain hands-on experience designing VR experiences emphasizing application, demonstration, or research purposes.

Students are expected to have some experience with computer programming and 3D graphics tools prior to taking this course. Recommended experience includes topics covered in courses such as VIST 271, CSCE 221, or CSCE 441. Students who are uncertain of the expected level of technical proficiency are encouraged to contact the instructor to discuss specifics. Experience with graphical and visualization tools, frameworks, and libraries (e.g., Unity, Unreal, Processing, OpenGL) is recommended. Familiarity with concepts of human-computer
interaction, aesthetic design, and mathematical functions is also recommended, but experience with all is not required.

III. LEARNING OUTCOMES OR COURSE OBJECTIVES

By the end of this semester, students will be able to:
1. Apply 3D interaction techniques to the design and development of 3D virtual environments.
2. Produce team based immersive virtual reality applications.
3. Distinguish between virtual reality systems in terms of display properties and interaction techniques.
4. Critically evaluate the design, purpose, benefits, and limitations of different virtual reality applications.
5. Evaluate and classify past and current virtual reality techniques.

Departmental Learning Outcomes

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
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<tr>
<td>Teamwork</td>
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<tr>
<td>Personal Responsibility</td>
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<tr>
<td>Social Responsibility</td>
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</table>

Weave Assessment Learning Objectives

<table>
<thead>
<tr>
<th>Stimulate Visual Thinking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurture Design Skills</td>
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<tr>
<td>Enhance Multidisciplinary Focus</td>
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<td>Encourage Collaborative Behavior</td>
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<td>Strengthen Ethical Behavior</td>
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<tr>
<td>Improve Personal Responsibility</td>
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</table>

IV. CONTACT INFORMATION

Eric Ragan
Email: eragan@tamu.edu
Office Hours: TBD. Please email to confirm an appointment
Office Location: Langford A-136
V. COURSE TOPICS AND CALENDAR

Class attendance is expected. Students should report any known future absences at least one week prior to the absence. Any graded class activities missed (e.g., quizzes, exams, presentations, homework submissions) during unapproved absences cannot be made up without the instructor’s prior approval and a valid excuse. The below schedule is tentative and may change (notice will be given if changes are made).

<table>
<thead>
<tr>
<th>Tuesdays</th>
<th>Thursdays</th>
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</thead>
<tbody>
<tr>
<td>Aug. 29 Course overview</td>
<td>Sep. 7 Papers: Navigation Present &amp; discuss</td>
</tr>
<tr>
<td>Sep. 5 Navigation</td>
<td>Sep. 14 Papers: Selection and manipulation Present &amp; discuss:</td>
</tr>
<tr>
<td>Sep. 12 Selection and manipulation</td>
<td></td>
</tr>
<tr>
<td>Sep. 19 Fidelity and presence</td>
<td>Sep. 21 Papers: Fidelity and presence Present &amp; discuss</td>
</tr>
<tr>
<td>Project plan due (team roles, schedule, description)</td>
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</tr>
<tr>
<td>Sep. 27 Perceptual illusion</td>
<td>Sep. 29 Papers: Perceptual illusion Present &amp; discuss</td>
</tr>
<tr>
<td>Oct. 3 Evaluation methodology</td>
<td>Oct. 5 * Papers: Evaluation methodology Midterm Exam</td>
</tr>
<tr>
<td>Project related literature</td>
<td>Oct. 12 Papers: Applications Present &amp; discuss</td>
</tr>
<tr>
<td>Oct. 10 Applications</td>
<td>Project demos start</td>
</tr>
<tr>
<td>Oct. 17 Sickness and perception</td>
<td>Oct. 19 Papers: Haptics Present &amp; discuss</td>
</tr>
<tr>
<td>Oct. 24 * Project work day</td>
<td>Oct. 26 * Project work day Preliminary project report (team roles, schedule, description, literature review)</td>
</tr>
<tr>
<td>Oct. 31 Project: 3-minute updates</td>
<td>Nov. 2 Papers: System control and symbolic input Present &amp; discuss: System control and symbolic input</td>
</tr>
<tr>
<td>Nov. 7 3D tracking systems</td>
<td>Nov. 9 Papers: Collaborative VR Present &amp; discuss</td>
</tr>
<tr>
<td>Nov. 14 Final exam review</td>
<td>Nov. 16 Final exam review</td>
</tr>
<tr>
<td>Nov. 21 Preliminary project videos Project: 3-minute updates</td>
<td>Nov. 23 Thanksgiving No class</td>
</tr>
<tr>
<td>Nov. 28 Project presentations</td>
<td>Nov. 30 Project presentations</td>
</tr>
<tr>
<td>Dec. 5 Project presentations</td>
<td>Dec. 7 Reading day No class</td>
</tr>
<tr>
<td>Final project deliverables</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>TBA</td>
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</tbody>
</table>

Final Exam TBA
VI. GRADING AND EVALUATION:

Course grades will be calculated based on a combination of weighted scores for projects, homework, exams, and quizzes. The final grade (after applying weights) will be truncated to the nearest whole number to determine the letter grade.

<table>
<thead>
<tr>
<th>Evaluation Weights</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Project:</td>
<td>A: &gt;= 90 &lt;= 100%</td>
</tr>
<tr>
<td>Application Papers (4):</td>
<td>B: &gt;= 80 &lt; 90%</td>
</tr>
<tr>
<td>Programs &amp; exercises (8):</td>
<td>C: &gt;= 70 &lt; 80%</td>
</tr>
<tr>
<td>Exams:</td>
<td>D: &gt;= 60 &lt; 70%</td>
</tr>
<tr>
<td>Participation:</td>
<td>F: &lt; 60%</td>
</tr>
</tbody>
</table>

Project (25% of final grade)
Students will work in teams to complete a semester-long project involving the design and development of a virtual reality application. Projects will provide students with opportunities to prototype creative designs and interaction techniques. More details on possible project concepts and expectations will be given in class. Early in the semester, teams will decide on project goals and develop an execution plan to be approved or revised by the instructor, and students will be expected to provide status updates and demonstrations throughout the class. Final project deliverables will include:

1. An oral presentation of the project goals and accomplishments.
2. A live demonstration of the project outcomes.
3. A brief video (maximum 3 minutes) demonstrating the outcome, design, and novelty of the work.
4. A document explaining the project’s purpose, the rationale for the approach, the design, and the results of any evaluation.
5. A document summarizing each team member’s contributions to the project.

For all but the last of the listed deliverables, each team is expected to work together to produce a single deliverable. For example, each team will submit one document and create one video (rather than multiple individual submissions). However, every student is expected to submit a separate summary of contributions explaining how each team member contributed to the project.
Application Papers (20% of final grade)
Papers will be required that describe/explain the use of VR in the industry. Particular topics will described as the course progresses. Unless otherwise stated, homework must be submitted before class on the given deadline to be eligible for full credit. Students can submit an assignment one day late to earn up to 75% of the assignment total; otherwise, a score of zero will be earned.

Programs and exercises (25% of final grade)
Short programs and exercises will be given to emphasize important concepts and techniques useful in virtual reality app development. Students can submit a program or exercise one day late to earn up to 50% of the assignment total; otherwise, a score of zero will be earned.

Students may be given the option of making up at most one assignment with a new assignment to be determined by the instructor. It is optional to make up points, and opportunities to make up points are not guaranteed. Make-up assignments may not be at the same level of difficulty or require the same level of work as the original assignment. Make-up opportunities must be agreed upon by both instructor and student.

Exams (20% of final grade)
Up to two exams will be administered in class (a midterm exam and a final exam). The formats of these exams will be described prior to exam days. Note that graduate and undergraduate sections have different exam formats.

Participation (10% of final grade)
Class attendance and participation are expected and required. Students are expected to engage in class discussion, offer answers to questions, and ask questions during/after presentations.

Extra Assignments (extra credit)
Opportunities to earn extra credit are not promised, but the instructor may opt to offer supplemental assignments for extra credit. Details will be determined per assignment and must be agreed upon by both the instructor and the student.

Attendance: The University views class attendance as the responsibility of an individual student. Attendance is essential to
complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/.

**Make-up Policy:** If an absence is excused, the instructor will either provide the student an opportunity to make up work that contributes to the final grade or provide a satisfactory alternative by a date agreed upon by the student and instructor. The make-up work must be completed in a time frame not to exceed 30 calendar days from the last day of the initial absence.

The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for the absence. Among the reasons absences are considered excused by the university are the following (see Student rule 7 for details http://student-rules.tamu.edu/rule07). The fact that these are university excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify and/or document properly may result in an unexcused absence. Falsification of documentation is a violation of the honor code.

**VII. REQUIRED MATERIALS/TEXT**

Reading assignments will be given from articles and research papers that are available through the university. There is no required textbook for the course, but the two recommended textbooks will complement the topics covered in the course.

**Recommended Texts:**

**VIII. COSTS**

No additional costs are expected for this course.

**IX. ADDITIONAL INFORMATION**

**Disabilities Act:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil
rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

**Copyright:** The handouts used in this course are copyrighted. By “handouts,” I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, lab problems, in-class materials, review sheets and additional problem sets and the contents of the class Web site. Because these materials are copyrighted, you do not have the right to copy the handouts, unless you are expressly granted permission. You have permission to make printouts of the on-line class notes and the class web site strictly for your use in this class.

**Plagiarism:** In this course, students are responsible for their own work, and credit must be given for external resources or assistance from others. Sharing or adopting the work of others (including, but not limited to, writing, code, and ideas) without providing proper credit can be interpreted as cheating or plagiarism. However, targeted discussion and collaboration with other students is encouraged in this course. Discussion of topics, design concepts, research philosophies, and implementation approaches is recommended to help elicit new ideas, improve understanding, and achieve a broader range of overall knowledge. Therefore, helping other students is acceptable and appreciated so long as any given assistance does not inhibit others from doing their own work and achieving assignment objectives for themselves. Use your best judgment and be mindful of the university integrity policies.

**Aggie Honor Code:**
“An Aggie does not lie, cheat or steal or tolerate those who do”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the

**Defacement of Property:** "It is unlawful for any person to damage or deface any of the buildings, statues, monuments, trees, shrubs, grasses, or flowers on the grounds of any state institutions of higher education (Texas Education Code Section 51.204)"

The words damage or deface refer specifically to any and all actions, whether direct or indirect, that either diminish the value or mar the appearance of the physical environment.