Course Change Request

Date Submitted: 04/19/19 11:49 am

Viewing: **ANTH 605: Conservation of Archaeological Resources I**

Last edit: 08/14/19 9:07 am

Changes proposed by: dlhamilton

Catalog Pages referencing this course

- ANTH - Anthropology
- Department of Anthropology

Programs referencing this course

- CERT-CG10: Conservation Training - Certificate

As A Banner Prerequisite:

Faculty Senate Number

Contact(s)

In Workflow

1. ANTH Reviewer GR
2. ANTH Department Head
3. Curricular Services Review
4. LA Committee Preparer GR
5. LA Committee Chair GR
6. LA College Dean GR
7. GC Preparer
8. GC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path

1. 03/04/19 3:32 pm
   Lori Wright (lwright): Approved for ANTH Reviewer GR
2. 03/12/19 10:01 am
   Cynthia Werner (werner): Approved for ANTH Department Head
3. 03/14/19 4:37 pm
   Terra Bissett (tbissett): Rollback to Initiator
4. 04/23/19 10:38 am
   Lori Wright (lwright): Approved for ANTH Reviewer GR
5. 04/23/19 1:51 pm
   Cynthia Werner (werner): Approved for ANTH Department Head
6. 04/24/19 11:13 am
   Terra Bissett (tbissett): Approved for Curricular Services Review
7. 04/29/19 11:42 am
   Sarah Franke (sfranke): Approved for LA Committee Preparer GR
8. 07/26/19 12:17 pm
   Maria Escobar-Lemmon (m_escobar): Approved for LA Committee Chair GR
9. 07/26/19 12:20 pm
Rationale for Course Edit
The proposed changes are part of a routine curriculum review. The proposed changes are to meet the demand/interest of students.

Course prefix   ANTH  
Course number  605  
Department   Anthropology  
College/School   Liberal Arts  
Academic Level   Graduate  
Effective term   Fall 2020  
Complete Course Title Conservation of Archaeological Resources I  
Abbreviated Course Title   CONS OF ARCHegl RES I  
Catalog course description Fundamentals and applications of artifact conservation techniques in archaeology.  
Prerequisites and Restrictions Knowledge of basic chemistry and physics recommended.  
Concurrent Enrollment No  
Should catalog prerequisites / concurrent enrollment be enforced? No  
Crosslistings No   Crosslisted With  
Stacked No   Stacked with  
Semester  3  
Credit Hour(s) (per week): Lecture:  2  
Lab:  2  
Other:  0  
Total  4  
Repeatable for credit? No  
Three-peat? No  

Name  
Donny L. Hamilton  
E-mail  dlhamilton@tamu.edu  
Phone  979-845-6355  

ANTH 605: Conservation of Archaeological Resources I

Course Syllabus

Required (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PHD-ANTH) Doctor of Philosophy in Anthropology</td>
</tr>
<tr>
<td>(MS-MARC) Master of Science in Maritime Archaeology and Conservation</td>
</tr>
<tr>
<td>(CERT-CG10) Conservation Training - Certificate</td>
</tr>
</tbody>
</table>

Elective (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CERT-CG28) Historic Preservation - Certificate</td>
</tr>
</tbody>
</table>

Curricular Justification
Four hour credit created scheduling programs and a financial burden on students with the limitation of paying registration for just 9 enrolled credit hour per semester. Also since this course was created, new conservation courses have taken on some of the material once covered in this course. Cutting the hours back to 3 hours solves the problems.

Reviewer Comments
Sandra Williams (sandra-williams) (03/26/18 10:39 am): Rollback: Please update ADA statement (shows Cain Hall) and include the Aggie Honor Code website. Also, grading appears to add up to 105% - maybe I am misreading.

dlhamilton (03/01/19 12:04 am): Sandra William’s comments addressed in revised up-loaded Anth 605 Syl Falll 2019.pdf
Terra Bissett (t.bissett) (03/14/19 4:37 pm): Rollback: Syllabus: old ADA statement - please update to reference
White Creek location.

Terra Bissett (T.bissett) (04/24/19 11:13 am): Updates received.

Betsy Peterson (betsypeterson) (08/14/19 9:07 am): Rollback: Rolling back per request from LaRhesa on 8/13/19.

Reported to state?

Change
CS

Key: 1251
ANTHROPOLOGY 605
Conservation of Archaeological Resources I
Fall Semester 20xx

Instructor: Donny L. Hamilton
Anthropology Bldg, Rm. 102
Phone 845-6355
E-mail: dlhamilton@tamu.edu

Office Hours: 9-12 AM, Monday – Thursday or by appointment.
Class Hours: 2:00 to 4:00 PM Tuesday and Thursday
Office: Anthropology Bldg., Conservation Research Laboratory, Rm. 102B

URL links are subject to change, especially those outside TAMU.
Dates on this example syllabus is for an earlier year.

Course Objective
This course introduces students to the techniques of stabilizing and preserving deteriorated or corroded artifacts from archaeological sites. Proper conservation techniques are introduced in seminar/laboratory sessions designed to familiarize students with the chemicals, equipment, and procedures used in the treatments. Practical experience will be gained in treating organic and siliceous materials, and the various metals commonly found in prehistoric and historic sites. The emphasis will be on the basic conservation processes successfully used on the most commonly encountered artifacts recovered from archaeological sites.

Learning Outcome:
This course introduces the students through structured lecture and carefully integrated hands on experience in a properly laboratory with the techniques of stabilizing and preserving deteriorated on corroded artifacts from archaeological sites - land sites and underwater sites. Upon completing the course each student will be able to appraise the conservation problems associated with the different archaeological materials and determine what conservation procedures are capable of solving the varied problems. Each student will learn from hands on experience be qualified to plan out strategies to conserve the basic materials encountered in most archaeological sites. Each student will know how to equip a basic conservation laboratory with the necessary equipment, chemicals, and expendables.

It must be remembered that the Conservation Research Laboratory (CRL) is a working laboratory. Therefore, all class and laboratory work is expected to be performed between 2:00 PM and 5:30 PM on Tuesdays and Thursdays. Work in CRL outside of class hours is not encouraged!


The latest version of the syllabus and various reading for the class will be posted on-line at: http://nautarch.tamu.edu/class/anth605/605syl.htm.

Additional Readings, other than those listed above will be assigned on a weekly basis. The links to the readings and conservation bibliography will be posted on the web and can be accessed by clicking on the links in the on-line syllabus. The index page for the pdf of the conservation manual) for this class can be found at: http://nautarch.tamu.edu/class/anth605/File0.htm
The individual chapters can be accessed by the following link(s): http://nautarch.tamu.edu/CRL/conservationmanual/File1.htm File1.htm through File18.htm, and File10a.htm and File10b.htm

Many of the assigned readings can be accessed through the links on this syllabus.


English Heritage - Publications

Waterlogged Organic Artefacts: Guideline on Their Recovery, Analysis, and Conservation

Guidelines on the X-radiography of Archaeological Metalwork

Guidelines on the recording, sampling, conservation and curation of waterlogged wood

Guidelines on how the detailed examination of artefacts from archaeological sites can shed light on their manufacture and use


TENTATIVE SCHEDULE (Subject to Change)
Integrated Lecture and Laboratory Classes – Tuesday and Thursday; 2:00 to 4:00 PM

Dates in this example correspond to 2017

WEEK 1: (Aug 29, 31) - Introduction to laboratory, Chemical Safety, Laboratory Tour. MATERIAL SAFETY DATA SHEETS (MSDS) FOR MATERIALS AND CHEMICALS USED IN THIS LAB ARE KEPT ON FILE IN ROOM 102A AND MAY BE ACCESSED AT:
Read: UNESCO book, Chapter A. Basic equipment and processes by H.W.M. Hodges
Dangerous Chemicals
Strength of Solutions
Toxicity of Chemicals

Readings: Cronyn, chpt. 1, Introducing Archaeological Conservation; ch. 2, Agents of
deterioration and preservation; ch. 3, General Techniques of Conservation; and Conservation,
The Archaeological Role of Conservation in Maritime Archaeology by Hamilton and Smith, and

WEEK 2: (Sept. 5, 7) - Adhesives & Consolidants.
Readings: Conservation Manual FILE
   2 http://nautarch.tamu.edu/class/anth605/File2.htm; UNESCO, 1968: Appendix: p. 305-
   331; Curt Moyer, The Duco Dialogues; Stephen Koob, Using Acryloid B-72 for the Repair of
   Archaeological Ceramics; SPNHC Leaflets, Vol. 1, No. 2; Adhesives and Consolidants in
   Geological and Paleontological Conservation: A Wall Chart.
   Thurs. - Begin Adhesive-Consolidants lab. Make Paraloid Glue and mix consolidants.

WEEK 3: (Sept. 12, 14) - Bone & Ivory
Readings: Cronyn ch. 6, pp. 238-245, pp. 275-284
Bone section in Manual: http://nautarch.tamu.edu/CRL/conservationmanual/File3.htm

WEEK 4: (Sept. 19, 21) - Wood
Readings:
Cronyn ch. 6, pp. 246-263
CCI Journal on Wood
Wood Section in Conservation Manual FILE 6
English Heritage Waterlogged Wood

Archaeological Preservation Research Laboratory WEB Pages:
Silicone Oil in Organic Conservation
Index to APRL Reports

Silicone and Polymer Technologies: An Additional Tool in Conservation
Re-treatment of PEG Treated Waterlogged Wood
Re-Treatment of a PEG Treated Composite Artifact - A Sabot

WEEK 5: (Sept. 26, 28 - Wood (cont.)
Readings: Watson, 1982, Freeze Drying. 237-242
WEEK 6: (Oct. 3, 5) - Leather
Readings: Cronyn ch. 6, pp. 263-274; Leather Conservation, (P&W, Ch. I, Animal Skins and Skin Products); Omar, McCord & Daniels, The Conservation of bog bodies by freeze drying, in SIC, V. 34, No. 3, pp. 101-109
Leather Section in Conservation Manual
Waterlogged Organic Artefacts Guidelines on their Recovery, Analysis and Conservation (Read leather p. 9 and wood p.12)

APRL WEB Page: Conservation Research Laboratory (CRL) Leather Dressing

WEEK 7: (Oct. 10, 12) - Textiles, Rope, & Misc. Organic Material

WEB Pages:
Silicone and Polymer Technologies: An Additional Tool in Conservation
Silicone Oil: A New Technique for Preserving Waterlogged Rope
Conservation of 17th Century Canvas Using Silicone Oils
Conservation of Waterlogged Corn Cobs Using Silicone Oils


WEB Pages:
Conservation of Devitrified Glass with Methylhydrocyclosiloxanes and Silicone Oils
http://nautarch.tamu.edu/aprl/report15.pdf

WEEK 9: (Oct. 24, 26) - First Exam, Tuesday, October 24; over non-metals
Metal Conservation Readings: Cronyn ch. 5, pp. 160-20
FILE 9 http://nautarch.tamu.edu/class/anth605/File9.htm
FILE 10a http://nautarch.tamu.edu/class/anth605/File10a.htm

Thurs. - Start iron conservation: Mechanical, Chemical Cleaning
WEEK 10: (Oct. 31, Nov. 2) - Iron, Electrolytic Cleaning

Readings: Iron Section in Conservation Manual

FILE 10b http://nautarch.tamu.edu/class/anth605/File10special.htm

Archaeological Metal Artifact Reduction/Cleaning by Electrolysis by Hamilton,

Tannic Acid by Logan, Judy

An improved tannin-based corrosion inhibitor-coating system for ferrous artifacts by Worth Carlin and Donald H. Keith IJNA, 25.1:38-45

WEEK 11: (Nov. 7, 9) - Copper, Bronze, Brass

Readings: Non-Ferrous Metals and Cupreous Metal Sections in Conservation Manual

FILE 11 http://nautarch.tamu.edu/class/anth605/File11.htm
FILE 12 http://nautarch.tamu.edu/class/anth605/File12.htm

Cronyn ch. 5, pp. 213-230;

Weisser, pp. 105-108;

A bronze cannon from La Belle, 1686: its construction, conservation and display, by Donald H. Keith and Worth Carlin, IJNA, 26.2: 144-158

WEEK 12: (Nov. 14, 16) - Lead, Tin and Pewter

Readings: Lead, Tin and Lead Alloys Section in Conservation Manual

FILE 14 http://nautarch.tamu.edu/class/anth605/File14.htm

Cronyn ch. 5, pp. 201-213

Lane 1979;


WEEK 13: (Nov. 21) - Silver and Gold; Composite Artifacts. Nov. 23, Thanksgiving Holiday

Readings: Silver and Gold Sections in Conservation Manual

FILE 13 http://nautarch.tamu.edu/class/anth605/File13.htm
FILE 15 http://nautarch.tamu.edu/class/anth605/File15.htm

Cronyn chpt 5, pp. 230-237

MacLeod & North 1979

Scott, 1983;

WEEK 14: (Nov. 28, 30 ) - Modern Metals, Composite Artifacts; Ceramic Restoration Exercise due Dec. 1.
**WEEK 15:** (Dec.5) - Tuesday, redefine day; Students attend their Thursday lab class instead of Tuesday class. Finish all projects, leave projects at your desk for grading, clean up laboratory. Last class day.

**Second Laboratory Exam over metals conservation, scheduled on Wednesday, December 13, 1-3 PM, the scheduled time for the final exam for this class.**

**BASIS FOR DETERMINING GRADE IN ANTHROPOLOGY 605**

Each student's grade will be based on:
1. Class attendance, participation in class discussions and laboratory activities. Excessive absences will be noted.
2. Two laboratory exams (50% of total grade, 25% each exam). The second exam to be taken on the day and time designated for the final for this time period. Note, keep this in mind, no early exams will be given.
3. Two laboratory reports (40% of total grade, 20% each)
4. Ceramic restoration project 10%.

Each report will emphasize the student's own laboratory experiences as well as pertinent observations and comparisons garnered from lectures, published data and assigned readings. Each report should be as succinct as possible. Each report will follow a prescribed format and will have no more than 15 pages of text, not counting figures, tables and samples.

**Report I:** Conservation of Organic Material (emphasis on wood and leather) - due by Friday, Nov. 8, 5:00 PM
**Report II:** Conservation of Metal, (emphasis on iron, brass, lead), due by Monday Friday, Dec. 6, 5:00 PM
**Ceramic Restoration Exercise**, to be placed on the table by your assigned seat in class by Friday, Dec. 1.

**Example Grading Scales:**

Standard Letter Grading Scale:
A = 90-100  B = 80-89  C = 70-79  D = 60-69  F = <60

**NOTE!!** - TREATED SAMPLES ARE TO BE INCLUDED WITH EACH REPORT.
**NOTE:** NO INCOMPLETES (I) WILL BE GIVEN IN THIS COURSE. FAILURE TO COMPLETE ALL THE COURSE REQUIREMENTS BY THE END OF THE SEMESTER WILL RESULT, AT THE OPTION OF THE INSTRUCTOR, IN AN "F" OR THE EXISTING AVERAGE OF THE WORK COMPLETED.
The 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 Department of Disability Services, Student Services @ White Creek, 701 West Campus Blvd. 1224 TAMU, College Station, TX 77843-1224, P: (979) 845-1637, F: (979) 458-1214, VP: (866) 860-7701, disability@tamu.edu.

TAMU Plagiarism Policy

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, 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 I expressly grant permission. As commonly deemed, 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."

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Academic Integrity

For many years Aggies have followed a Code of Honor, which is stated in this very simple verse:

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

The Aggie Code of Honor is an effort to unify the aims of all Texas A&M men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified.

The Aggie Code of Honor functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. For additional information see: http://aggiehonor.tamu.edu

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Attendance Policy and Grading Scale Examples

Attendance 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."
ANTH 606: Conservation of Archaeological Resources II

Catalog Pages referencing this course

ANTH - Anthropology
    Department of Anthropology

Programs referencing this course

CERT-CG10: Conservation Training - Certificate

Contact(s)

In Workflow
1. ANTH Reviewer GR
2. ANTH Department Head
3. Curricular Services Review
4. LA Committee Preparer GR
5. LA Committee Chair GR
6. LA College Dean GR
7. GC Preparer
8. GC Chair
9. Faculty Senate Preparer
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11. Provost II
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13. Curricular Services
14. Banner

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   Terra Bissett (l.bissett): Approved for Curricular Services Review
7. 04/29/19 11:42 am
   Sarah Franke (sfranke): Approved for LA Committee Preparer GR
8. 07/16/19 12:18 pm
   Maria Escobar-Lemmon (m.escobar): Approved for LA Committee Chair GR
9. 07/26/19 12:20 pm
RaƟonale for Course Edit

The proposed changes are part of a routine curriculum review. The proposed changes are to meet the demand/interest of students.

Course prefix ANTH Course number 606
Department Anthropology
College/School Liberal Arts
Academic Level Graduate
Effective term Fall 2020
Complete Course Title Conservation of Archaeological Resources II
Abbreviated Course Title CONS OF ARCHLGL RES II

Catalog course description Comprehensive study of techniques used in the identification and conservation of metal and wooden artifacts.

Prerequisites and Restrictions ANTH 605.
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>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(</td>
<td>ANTH 605</td>
<td>D</td>
<td>GR</td>
<td>)</td>
<td>No</td>
</tr>
</tbody>
</table>

Crosslistings No
Stacked No

Semester 3 4
Credit Hour(s) Contact Hour(s) (per week): Lecture: 2 4 Lab: 2 4 Other: 0 Total 4 6
Repeatable for credit? No
CIP/Fund Code 4503010001
Default Grade Mode Letter Grade (G)
Method of instruction Lecture and Laboratory
Will this course be taught at another branch? No
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)  
(CERT-CG10) Conservation Training - Certificate

Elective (select program)  
(PHD-ANTH) Doctor of Philosophy in Anthropology  
(MS-MARC) Master of Science in Maritime Archaeology and Conservation  
(CERT-CG28) Historic Preservation - Certificate

Course Syllabus

<table>
<thead>
<tr>
<th>Syllabus:</th>
<th>Upload syllabus</th>
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<tbody>
<tr>
<td>Upload syllabus</td>
<td>ANTH 606 change.pdf</td>
</tr>
</tbody>
</table>

Letters of support or other documentation  
No

Additional information

Reviewer Comments

dihamilton (03/22/18 2:26 am): Curricular Justification Four hour credit created scheduling programs and a financial burden on students with the limitation of paying registration for just 9 enrolled credit hour per semester. Also since this course was created, new conservation courses have taken on some of the material once covered in this course. Cutting the hours back to 3 hours solves the problems.

Sandra Williams (sandra-williams) (03/26/18 10:41 am): Rollback: Please update ADA statement (shows Cain Hall) and include the Aggie Honor Code website. Also, one of the listed grading appears to add up to 105% - maybe I am misreading.


Terra Bissett (t.bissett) (03/14/19 4:53 pm): Rollback: Syllabus: Old ADA statement - please update to reference White Creek location; missing link to the Aggie Honor Code website; grading under "Class Grade" show to add up to 100%, but section "Basis for Determining Grade in Anthropology" appears to add up to 105%; update course number within this section.

Lori Wright (lwright) (04/23/19 10:37 am): looks to me like ADA location was updated. I fully support these revisions and changes, and would underscore the need for these to be instituted by the fall of 2019

Terra Bissett (t.bissett) (04/24/19 11:22 am): Updates received.
ANTHROPOLOGY 606
Conservation of Archaeological Resources I
Spring Semester 20XX

Instructor: Donny L. Hamilton
Anthropology Bldg. Rm. 102
Phone 845-6355
E-mail: dlhamilton@tamu.edu Or donnylh@yahoo.com
Office Hours: 9:00 AM - 1:00 PM, Monday and Wednesday or by appointment
Class Hours: 2:00 to 4:00 PM Tuesday and Thursday
Office: Anthropology Bldg., Conservation Research Laboratory, Rm. 102-B

Course Objectives:
Conservation of Cultural Resources II is the second of three conservation classes in the Nautical Archaeology Program required for the Conservation Certificate. This class is designed as a hands-on class where you get experience working with actual artifacts from archaeological sites and learn basic casting techniques used in conservation. Each student will work individually on a number of projects in the lab. It is not designed to be a problem type course (685) or a theoretical course where you conduct independent research. In order to provide you with practical, hands-on experience, you will be required to complete several casting projects and conserve a variety of material from archaeological sites, as well as a number of assigned projects. There will be a number of artifacts from actual archaeological sites to be conserved. Regardless, you are responsible for filling out a conservation card, keeping the artifact or object with its identifying artifact number at all times, taking photographs of each step of the conservation process. Before starting any project you are to determine what problems might be present and how you are going to solve the problems by preparing a detailed, step by step listing of the steps you intend to take. Before, during, and after, photographs and x-rays (as needed) are required. The conservation plan you design has to be approved by Dr. Hamilton before starting.

In this class you are able to put into practice the skills and techniques that you were exposed to in ANTH 605 and develop a more in depth understanding of the procedures involved. In addition you will be taught some new conservation skills that were not covered in ANTH 605, such as radiography and casting techniques. You will be expected to be imaginative and to “think on your feet” as you devise treatment processes for the different artifacts. You are expected to conduct research on the alternative procedures for treating your artifacts. Each artifact is analogous to a seminar report and you are expected to have a thorough understanding of the conservation processes and know the rationale for whatever conservation process you selected to treat each artifact. Each project you undertake will constitute part of an “Artifact Conservation Portfolio” that you will turn in for the course grade at the end of the semester.

A folder labeled 606-2019 will be created on the lab computer and each student will create a subfolder with their last name and all the images of the separate projects will be placed in individual subfolders. All digital images are to be renamed using the artifact number of the artifact if it has one or a descriptive name. Each photograph is to have the artifact number and a scale in the image. There will be a laboratory camera available and in some instance you may use your cell phone can be used. Photographs can be downloaded on the classroom computer.

LEARNING OUTCOME:
This course trains students with the techniques of stabilizing and preserving deteriorated or corroded artifacts from archaeological sites - land sites and underwater sites. Upon completing the course:
Each student will be able to appraise the conservation problems associated with the different archaeological materials and determine what conservation procedures are capable of solving the varied problems. Each student will be qualified to plan out strategies to conserve the basic materials encountered in most archaeological sites. Each student will know how to equip a basic conservation laboratory with the necessary equipment, chemicals, and expendables.

**Class Grade:** Each student will be graded on:

1. The Artifact Conservation Portfolio you prepare with the casting and other lab projects. Projects will be graded once they are turned in, allowing changes to be made before placing it in each student’s portfolio. There is no set date for most of the projects. All the data in the portfolio are to be typed and each report will have a separate folder for each artifact and will be analogous to a formal, personal “Conservation Portfolio.” You would present to an employer as examples of what you are capable of doing. Each report is to be typed.

2. A final examination, specifically designed for each student based on their specific projects and portfolio. The examination will be based on questions that arise after reading the final laboratory reports.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Laboratory Reports with conserved artifacts</td>
<td>50%</td>
</tr>
<tr>
<td>Casting Projects with procedural details, molds, and cast objects</td>
<td>30%</td>
</tr>
<tr>
<td>Final Examination – Individualized</td>
<td>20%</td>
</tr>
</tbody>
</table>


The portfolio containing all laboratory reports is due by Friday, following the last day of the class.

Please note. Often, you will be in many instances be working with numbered artifacts from an archaeological site. At all times you will keep the number with the artifact.

If you have an artifact or a project without a number, you are to assign it a unique number.

**WARNING !!!** DON'T EVER LET ANY ENCRUSTATION, ARTIFACT, OBJECT, MOLD OR CAST BE SEPARATED FROM ITS NUMBER.

Every conservation card, x-ray, drawing, notes, and digital images in the portfolio has to have the number recorded on it and have your name, as the conservator on the main CRL conservation card and all drawings. All the work you do on the artifact will be documented and dated. You will be responsible for the complete documentation, drawing, scaled drawing, photographing, x-raying and researching each artifact you process. Every record card, drawing, digital photograph file, photographs, and radiograph has to have the artifact number written on it. The majority of the photographic recording will be done with digital cameras or you can use your cell phone if the resolution is good. Scales are to be included in the photographs. You will be responsible for finding all the pertinent records that might be on file.

On each project you start, you are REQUIRED to fill out a Conservation Plan and fill out a CRL artifact Card for each project. On the plan form will state the problem, and present a conservation plan, based on your own research of the conservation literature that addresses the problem at hand. The first draft of the conservation plan that is presented to me for review can be written out, however, the final conservation plan is to be typed. All conservation plans must be approved before any work is started on the project.
Once the conservation or project is started, all the pertinent project data, such as artifact number, photographic film roll and frame, x-ray exposure, overall assessment and evaluation, are to be recorded on a CRL artifact card any additional cards that may be required. After this is done, and only after this is done, you will give me the card with all the pertinent information, including, the artifact to be conserved, the field notes, the x-rays, and any photographic prints (if they have been printed), or printouts of the digital images. For the actual conservation, a CRL Conservation Card will be used to record the process and become an official part of the records of the site when part of an official CRL project. On a separate card, the before digital photograph will be printed. Additional photographs and radiographs will be printed on additional cards. Do not write or put data on the back of any card or sheet -- because it complicates the process of scanning the records in a PDF file.

On each project you will be expected to do it as well or better than I would do it. Sloppiness will not be tolerated... The final portfolio will be a compendium of your projects and will be presented as a portfolio e.g. the folder will demonstrate a series of artifacts taken completely through the conservation processes with appropriate drawings, photographs of relevant stages of conservation, preliminary analysis, and proposal for conservation, actual conservation, final documentation, identification, and parallels. Every project will be put on separate sheets of paper in individual folders so that each artifact section can be extracted and inserted in the files. Do not write on the backs of the sheets. Include the treated artifacts, all documentation, molds, and casts.

Each conserved artifact, as much as possible, will be researched, identified, with all the necessary photographs, scaled drawing, and comparative data.

**Required Projects**

1. Each student will start by selecting, a number of artifacts to be conserved or cast. If available an encrustation is to be selected to be radiographed, and then cast any mold that might be present. If it happens to have a mold of an artifact -- and hopefully, some will. You will pull from the records all the data pertaining to each encrustation. If time permits, several encrustations may be selected. You should try to get a range of materials and/or different conservation problems requiring alternative conservation procedures. There is no reason for you ever to not have anything to do. Some students may do 10 or more encrustations or artifacts, other students may do fewer more complicated encrustation in addition to the ones requiring casting. One or more of the encrustations must or should contain a mold of an object that has to be cast. Students will not be allowed to take on a project that cannot be completed within the semester or is beyond their capability. All projects are to be completed before the end of the semester.

2. Each encrustation is to be photographed, with a scale and the artifact number placed below the encrustation (so it can be cropped if necessary). A print is to be made of the encrustation. (Several may be grouped together) Properly catalogued negatives and prints will be turned in as part of the lab project and where appropriate, included with your term paper. All digital photographs are to have the artifact number as part of the file name and all the photographs of each student are to be placed in individual folders on the graphics computer in the photographic studio. Any printed photograph is to have the artifact number recorded on it.

3. Each encrustation is to be x-rayed. Regardless, each student is required to use the x-ray machine and be a part of the lab project their x-rays. These will also be included with your paper. Each x-ray must be properly exposed and interpreted. In the past we made x-ray images using film and even photographic paper. For this class all x-rays will be digital unless an x-ray on sheet film would provide you with a better...
image. All radiographs are to have the artifact number prominently displayed – either part of the x-ray by using lead letters or labeled with ink.

All radiography is to be coordinated with DLH or Chris may also assist in radiography. On medium to large artifacts, it may not be possible to x-ray them. I will tell you when I think that it would be fruitless. In some instances, a difficult encrustation may be taken to CRL at The RELLIS Campus and x-rayed.

4. After gathering all the data, prints, and radiographs, each artifact will be evaluated and you will formally record the conservation procedure you plan to accord each encrustation. Once you have outlined your planned procedure, listing each step, then come to me to go over it. It is necessary for you to do all the background research and be aware of what has been done with this material and what is feasible before you come to me to go over it and sign off on it. After getting me to sign off on it, you may then proceed on the proposed treatment. Once you start, plans often change! You are encouraged to be imaginative, and where possible devise some sort of comparative or evaluation procedure. Consult the conservation bibliographies and references contained on the shared Class 605-6 Read Dropbox folder, and any other necessary reference, so you know what you are talking about and what you are proposing to do.

Again, it is expected that you have reviewed all the conservation alternatives that could be used on each material, before you present to me the conservation procedures on the Conservation Plan Card. This requires you to be familiar with the conservation literature or that you review it in order to submit the plan. One or more references in addition to the 605 Conservation Manual or its variations, is required on each conservation plan.

5. You will be required to make a latex or silicone rubber peel of an appropriate object. The latex peel and a plaster cast of the peel will be turned in as a lab project.

6. You will be required to make a one piece, 3-dimensional silicone or latex rubber mold of an object and make a cast in plaster from the mold.

7. You will be required to make a two piece mold of an appropriate object, and make a cast of it. The mold and the cast is an assigned lab project. Maximum of two attempts.

8. You will be required to make an epoxy mold of a natural mold in an encrustation – depending on availability. The x-ray of the encrustation and the cast of the mold is to be turned in as a lab project. If appropriate, the cast, its scaled drawing, and possibly photograph will be included in your lab report.

9. You will be required to make a metal cast of an appropriate object by the lost wax process. For this exercise, you are required to make a mold using Ferris Mold Frames and a flexible molding compound. We once used See-Through Mold Compound, but it is no longer available. You are limited in the size of the object to be replicated by the size of the mold frames. The mold for the wax casting and a good metal cast is to be turned in as a lab report. No objects larger than the available mold frames can be used to make a lost wax cast.

No objects larger than the available mold frames can be used to make a lost wax cast.

NOTE! You do not have unlimited chances to repeat the entire process. More than two attempts require my permission. The lab is not a factory for the small scale production of metal casts. Obviously some students
have abused this in the past. The entire process is fairly expensive and very time consuming. You can come up with an appropriate small object to cast or different artifacts from some source.

10. Every student will be required to process at least one metal artifact by electrolytic reduction. During electrolysis, each student will perform chloride titration tests and graph the results. Each student will be required to perform electromotive potentials on an artifact -- if I get the equipment operative -- possibly theirs, possibly a class object, during electrolysis. The results will be graphed. The chloride and electromotive potential measurements will be presented as a lab project, and where appropriate turned in with your term paper. This should be started as early as possible.

11. Either wood and/or rope samples will be processed with a silicone oil process. Any other projects that either you or I think of between now and the end of the semester.

12. Each student will take on the conservation of a model Chinese junk for experience dealing with ethnographic objects consisting of varnished, stained or painted wood, cloth, string, and metal. Junks are to be worked on when leeward time is available.

Class Grade: Each student will be graded on:
1. The assigned casting and other lab projects. Projects will be grade as they are turned in. No set date for most of the projects.
2. A final laboratory report that presents the results of your artifact conservation projects. The report will have a separate folder for each artifact conserved and will be analogous to a formal, personal “Conservation Portfolio.”
4. A final examination, specifically designed for each student, based on their specific projects and reports. The examination will be based on questions that arise after reading your final laboratory reports.

Laboratory reports with conserved artifacts. 50%
Casting Projects 20%
Final Examination - Individualized for each person based on final lab report. 30%

All laboratory reports are due by the last official day of class – Tuesday, May xx, 20xx.
Final Exam: As scheduled by the student or at designated final exam time.

Please note. Often, you will be re working with numbered artifacts from an archaeological site. At all times you will keep the number with the artifact.

Summary: – ALL of these are required.
1. A good (or useable) x-ray of each encrustation or object and the interpretation of the radiograph.
2. Cast from a natural mold in an encrustation (if any are available).
3. Latex peels and casts of an object.
4. Single, 3-D solid latex mold of an object and cast.
5. Two piece mold of an object and cast.
6. Two piece mold of a projectile point using cans.
7. Metal cast of an object using lost wax process. Done only with assistance of DLH or other designated lab staff. It takes two to three people to do it safely.
8. Report on projects on conserved artifacts and casts above.
9. Model Chinese Junk
10. Your choices.

Lectures/class demonstrations:
1. Radiography – second week.
2. Casting, mold making, lost wax casting.
3. D.C. power supplies, how they work and how to build one from scratch.
   Electromotive measurements -- possibly
4. Silicone oil treatments
5. Individual help at all stages.

In my absence, a graduate assistant may supervise the class. When applicable, selected artifacts or objects may be selected to be scanned with a Faro laser and then printed on a 3-D Printer. Where applicable, XRF analysis of an object will be conducted.

All of this will be staggered through the semester. It is important that everyone not work on the same projects at the same time. Each must work individually in order to maximize the limited facilities in the laboratory. Each student is to keep his work area orderly and clean up all messes, and wash or clean all equipment used in the lab.

Exact projects and course requirements are subject to minor changes and readjustments as the semester gets underway.

The 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 Department of Disability Services, Student Services @ White Creek, 701 West Campus Blvd. 1224 TAMU, College Station, TX 77843-1224, P: (979) 845-1637, F: (979) 458-1214, VP: (866) 860-7701, disability@tamu.edu.

TAMU Plagiarism Policy
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, 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 I expressly grant permission. As commonly deemed, 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."
For many years Aggies have followed a **Code of Honor**, which is stated in this very simple verse:

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

The Aggie Code of Honor is an effort to unify the aims of all Texas A&M men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified. For additional information see: [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu)

**Title IX and Statement on Limits to Confidentiality**

Texas A&M University and the College of Liberal Arts are committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws provide guidance for achieving such an environment. Although class materials are generally considered confidential pursuant to student record policies and laws, University employees — including instructors — cannot maintain confidentiality when it conflicts with their responsibility to report certain issues that jeopardize the health and safety of our community. As the instructor, I must report (per Texas A&M System Regulation 08.01.01) the following information to other University offices if you share it with me, even if you do not want the disclosed information to be shared:

- Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Student Counseling Service ([https://scs.tamu.edu/](https://scs.tamu.edu/)).

Students and faculty can report non-emergency behavior that causes them to be concerned at [http://tellsomebody.tamu.edu](http://tellsomebody.tamu.edu).
Course Change Request

Date Submitted: 07/30/19 2:26 pm

Viewing: BICH 656: RNA World

Last approved: 05/04/17 3:18 am
Last edit: 08/01/19 11:06 am
Changes proposed by: r.almanzar1

Catalog Pages referencing this course

BICH - Biochemistry
Department of Biochemistry and Biophysics

Faculty Senate Number

Contact(s)

In Workflow
1. BCBF Reviewer GR
2. BCBF Department Head
3. Curricular Services Review
4. AG Committee Preparer GR
5. AG Committee Chair GR
6. AG College Dean GR
7. GC Preparer
8. GC Chair
9. Faculty Senate Preparer
10. Faculty Senate
11. Provost II
12. President
13. Curricular Services
14. Banner

Approval Path
1. 07/31/19 4:44 pm
   Jean-Philippe Pellois (pellois): Approved for BCBF Reviewer GR
2. 07/31/19 5:15 pm
   Jean-Philippe Pellois (pellois): Approved for BCBF Department Head
3. 08/01/19 11:06 am
   Sandra Williams (sandra-williams): Approved for Curricular Services Review
4. 08/02/19 1:07 pm
   Jamie Norgaard (jnorgaard): Approved for AG Committee Preparer GR
5. 08/02/19 1:21 pm
   Mary Bryk (bryk): Approved for AG Committee Chair GR
6. 08/02/19 1:21 pm
   Mary Bryk (bryk): Approved for AG College Dean GR
7. 08/27/19 9:33 am
   LaRhesa Johnson (lrjohnson): Approved for GC Preparer
8. 09/05/19 3:25 pm
   LaRhesa Johnson (lrjohnson): Approved for GC Chair
Rationale for Course Edit

Explain other rationale

Course prefix

Department

College/School

Academic Level

Academic Level (alternate)

Effective term

Complete Course Title

Abbreviated Course Title

Catalog course description

Prerequisites and Restrictions

Concurrent Enrollment

Should catalog prerequisites / concurrent enrollment be enforced?

Crosslistings

Stacked

Semester Credit Hour(s)

Repeatable for credit?

Three-peat?

CIP/Fund Code

Default Grade Mode

Alternate Grade Modes

Method of instruction

Will this course be taught at another branch?

Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)
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>(MS-BICH) Master of Science in Biochemistry</td>
</tr>
<tr>
<td>(MS-GENE) Master of Science in Genetics</td>
</tr>
<tr>
<td>(MS-MDSC) Master of Science in Medical Sciences</td>
</tr>
<tr>
<td>(PHD-BICH) Doctor of Philosophy in Biochemistry</td>
</tr>
<tr>
<td>(PHD-GENE) Doctor of Philosophy in Genetics</td>
</tr>
<tr>
<td>(PHD-MDSC) Doctor of Philosophy in Medical Sciences</td>
</tr>
</tbody>
</table>

**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus

Letters of support or other documentation No

Additional information

Reviewer Comments

Sandra Williams (sandra-williams) (08/01/19 11:06 am): This type of change does not require a syllabus.

Reported to state?

Change-Title CS

Key: 17364
Course Change Request

Date Submitted: 04/03/19 10:37 am

Viewing: **CSCE 625: Artificial Intelligence**

Last edit: 07/24/19 9:54 am

Changes proposed by: karrie.bourquin

Rationale for Course Edit

The proposed changes are part of a routine curriculum review.

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karrie Bourquin</td>
<td><a href="mailto:karrie@cse.tamu.edu">karrie@cse.tamu.edu</a></td>
<td>979-845-4087</td>
</tr>
</tbody>
</table>

Course prefix | CSCE | Course number | 625 |
<table>
<thead>
<tr>
<th><strong>Catalog course description</strong></th>
<th>Basic concepts and methods of artificial intelligence; Heuristic search procedures for general graphs; game playing strategies; resolution and rule based deduction systems; knowledge representation; reasoning with uncertainty.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prerequisites and Restrictions</strong></td>
<td>CSCE 411, 221.</td>
</tr>
<tr>
<td><strong>Concurrent Enrollment</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Should catalog prerequisites / concurrent enrollment be enforced?</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Crosslistings</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Stacked</strong></td>
<td>No</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Lecture: 3</th>
<th>Lab: 0</th>
<th>Other: 0</th>
<th>Total</th>
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<tr>
<td>Semester 3</td>
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<td>0</td>
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<td>Credit Hour(s)</td>
<td>Lecture</td>
<td>3</td>
<td>Lab</td>
<td>Other</td>
</tr>
<tr>
<td>Repeatable for credit?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-peat?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CIP/Fund Code</td>
<td>110120006</td>
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<tr>
<td>Default Grade Mode</td>
<td>Letter Grade (G)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternate Grade Modes</td>
<td>Satisfactory/Unsatisfactory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method of instruction</td>
<td>Lecture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will this course be taught at another branch?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will this course be taught as a distance education course?</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is 100% of this course going to be taught in Texas?</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Will classroom space be needed for this course?</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Required (select)
### Program(s)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MCS-CPSC) Master of Computer Science in Computer Science</td>
</tr>
<tr>
<td>(MEN-CECN) Master of Engineering in Computer Engineering</td>
</tr>
<tr>
<td>(MS-CECN) Master of Science in Computer Engineering</td>
</tr>
<tr>
<td>(MS-CPSC) Master of Science in Computer Science</td>
</tr>
</tbody>
</table>

## Course Syllabus

**Syllabus:**

Upload syllabus

**Letters of support or other documentation:**

No

**Additional information:**

**Reviewer Comments:**

Terra Bissett (t.bissett) (07/24/19 9:54 am): Syllabus not required for this type of change.

**Reported to state?:**

No
Course Change Request

Date Submitted: 07/12/19 2:44 pm

Viewing: **CSCE 705: Introduction to Computing Systems**

Last approved: 03/30/19 3:32 am

Last edit: 07/23/19 4:26 pm

Changes proposed by: smilingsheila

Catalog Pages

- CSCE - Computer Sci. & Engr.
- Department of Computer Science and Engineering

Faculty Senate Number: FS.36.366

Contact(s)

In Workflow

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

Approval Path

1. 07/23/19 9:43 am
   Scott Schaefter
   (schaefer): Approved for CSCE Department Head
2. 07/24/19 8:18 am
   Terra Bissett (t.bissett): Approved for Curricular Services Review
3. 08/16/19 2:32 pm
   Jennifer Veracruz
   (jveracruz): Approved for EN Committee Preparer GR
4. 08/21/19 2:55 pm
   Harry Hogan (h-hogan): Approved for EN Committee Chair GR
5. 08/21/19 2:59 pm
   Harry Hogan (h-hogan): Approved for EN College Dean GR
6. 08/27/19 9:35 am
   LaRhesa Johnson
   (lrjohnson): Approved for GC Preparer
7. 09/05/19 3:25 pm
   LaRhesa Johnson
   (lrjohnson): Approved for GC Chair

History

1. Mar 30, 2019 by Karrie Bourquin
   (karrie.bourquin)
**Rationale for Course Edit**

The proposed changes are to meet the demand/interest of students.

<table>
<thead>
<tr>
<th>Course prefix</th>
<th>Course number</th>
<th>Department</th>
<th>College/School</th>
<th>Academic Level</th>
<th>Effective term</th>
<th>Complete Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE</td>
<td>705</td>
<td>Computer Science &amp; Engineering</td>
<td>College of Engineering</td>
<td>Graduate</td>
<td>Fall 2019</td>
<td>Introduction to Computing Systems</td>
</tr>
</tbody>
</table>

**Catalog course description**

Principles of basic computer systems; motivation, challenges and design issues in modern operating systems; synchronous and asynchronous event handling; principles of high-performance design in software and hardware, e.g., caching, multi-programming and virtual memory; software efficiency using concurrency, scheduling, concurrency and synchronization; persistent storage; I/O mechanism; network programming; network and software security and vulnerabilities; some advanced topics relating to security and modern networks; experience with programming in at least one of the following languages C/C++, Java or Python.

**Prerequisites and Restrictions**

Graduate classification.

**Concurrent Enrollment**

No

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

No

**Crosslistings**

No

**Stacked**

No

**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**

1107010006

**Default Grade Mode**

Letter Grade (G)

**Alternate Grade Modes**

Satisfactory/Unsatisfactory

**Method of instruction**

Lecture

**Will this course be taught at another branch?**

No

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

Yes

Learning Outcomes
Add a justification statement indicating the department/college faculty determined the learning outcomes are appropriate for the course.

While evaluating the student learning outcomes for both the traditional and non-traditional versions of the course, the CSCE Department faculty members reviewed the syllabus, homework assignments, projects, case studies, papers, exams, and other required course deliverables for each course. The faculty considered A) whether the time required for students to complete assigned learning activities and B) whether the qualitative and quantitative expectations for the students were appropriate for degree level, discipline, and weight in the student’s final grade. Based on this evidence, the faculty concluded that the student learning outcomes for the non-traditional course were equivalent to the student learning outcomes for the traditional course.

**Hours**

Add a justification statement indicating the department/college faculty determined the contact hours are appropriate for the course.

For the non-traditional course offering, the CSCE Department faculty reviewed the other academic activities, which require active faculty engagement with the students, that could be considered equivalent to face-to-face contact hours from TAMU University Rule 11.03.99.M1 Section 2.1. In their review, the faculty considered A) whether the alternate academic activity was required and structured and B) whether the total set of alternate academic activities were sufficient to be considered equivalent to a traditional course. Based on this evidence, the faculty concluded that contact hour requirements for the non-traditional course offering are equivalent to a traditional course.

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

Yes  No

**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>Required (select program)</th>
<th>Elective (select program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MEN-CECN) Master of Engineering in Computer Engineering</td>
<td></td>
</tr>
<tr>
<td>(MS-CECN) Master of Science in Computer Engineering</td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>(MCS-CPSC) Master of Computer Science in Computer Science</td>
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</tr>
</tbody>
</table>

---

**Course Syllabus**

**Syllabus:** Upload syllabus

Upload syllabus

Intro to Computing - Syllabus.pdf

705 Intro Computing Systems Web.pdf

**Letters of support or other documentation**

No  Yes

**Additional information**

**Reviewer Comments**
<table>
<thead>
<tr>
<th>Reported to state?</th>
<th>Add</th>
<th>CS</th>
<th>No</th>
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</table>

Key: 18912
Course title and number: CSCE 705: Introduction to Computing Systems
Term: Summer 2020
Meeting times and location: WEB

Course Description and Prerequisites

Principles of basic computer systems; motivation, challenges and design issues in modern operating systems; synchronous and asynchronous event handling; principles of high-performance design in software and hardware (e.g., caching, multi-programming, virtual memory); software efficiency using concurrency, scheduling, concurrency, and synchronization; persistent storage; I/O mechanism; network programming; network and software security and vulnerabilities; some advanced topics relating to security and modern networks. Experience with programming in at least one of the following languages: C/C++, Java, or Python.

Prerequisites: Graduate classification

Learning Outcomes or Course Objectives

At the end of this course, students would be able to:

- Enumerate the system design space under various constraints
- Comprehend the basic architecture and mechanisms of an operating system and apply that understanding for writing software applications
- Develop high-performance software applications exploiting concurrency and synchronization primitives provided by OS
- Build network applications using client-server model
- Conceptualize network and software vulnerabilities, security loopholes and attacks. Apply these to designing applications and security policies resilient against these vulnerabilities

Instructor Information

Name: Sarker Tanzir Ahmed
Telephone number: 979-845-4908
Email address: tanzir@tamu.edu
Office hours: TBD
Office location: TBD

Textbook and/or Resource Material


**Grading Policies**

This course will have 3-4 programming projects (45%), a midterm exam (20%), a final exam (20%), writing assignments and/or small programming problems (10%), piazza discussion participation (5%). Projects are individual effort (teamwork not allowed). Late submission of the projects is allowed with a penalty of 15% per day.

**Attendance**

All absences will be handled according to Texas A&M student rule 7 
http://student-rules.tamu.edu/rule07 It is your responsibility to keep up with the class, even when unexpected events interfere.

**Missed Exams**

Missed exams will only be rescheduled for university excused absences. Note that if advanced notice is not feasible, you have 2 business days to provide notification. A zero will be assigned for exams due to an unexcused absence. Documentation must be submitted prior to making up a missed exam or quiz.

**Late Work Policy**

Late homework assignments will be accepted up to 4 days late with a 5% penalty for each late day. No penalty for excused absences turned in up to four days after return to class. Please discuss unusual circumstances in advance with the instructor.

The midterm exam is scheduled for TBD according to University Final Examination policy.

---

**Grading Scale**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
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</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
</tr>
</tbody>
</table>

**Course Topics, Calendar of Activities, Major Assignment Dates**

TAMU Academic Calendar
https://registrar.tamu.edu/Catalogs,-Policies-Procedures/Academic-Calendar

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Inside a Computer: essential components, Von Neuman model, basic computer organization using combinational and sequential components Operating Systems: history, components/features of a modern OS, processes, exceptions, hardware support, API</td>
</tr>
<tr>
<td>3-4</td>
<td>Memory subsystem: organization, virtual memory, caching Storage subsystem: organization, file representation, file access and permissions</td>
</tr>
<tr>
<td>5-6</td>
<td>Concurrency and Threads: performance, synchronization primitives and data structures, and classic problems Midterm Exam Inter-Process Communication: message queues, pipes, shared memory, signals, asynchronous programming</td>
</tr>
<tr>
<td>7-8</td>
<td>Computer Networks: history, network infrastructure, mechanisms, and security System Security: vulnerabilities, attacks, and counter measures</td>
</tr>
<tr>
<td>9-10</td>
<td>Modern Networks: Software-Defined Networks (SDN), Virtual Network Functions (VNF), data-center networks Final Exam</td>
</tr>
</tbody>
</table>
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.”
Course title and number: CSCE 705: Introduction to Computing Systems
Term: Spring 2019
Meeting times and location: TBD

Course Description and Prerequisites

Principles of basic computer systems; motivation, challenges and design issues in modern operating systems; synchronous and asynchronous event handling; principles of high-performance design in software and hardware (e.g., caching, multi-programming, virtual memory); software efficiency using concurrency, scheduling, concurrency, and synchronization; persistent storage; I/O mechanism; network programming; network and software security and vulnerabilities; some advanced topics relating to security and modern networks. Experience with programming in at least one of the following languages: C/C++, Java, or Python.

Learning Outcomes or Course Objectives

At the end of this course, students would be able to:

- Enumerate the system design space under various constraints
- Comprehend the basic architecture and mechanisms of an operating system and apply that understanding for writing software applications
- Develop high-performance software applications exploiting concurrency and synchronization primitives provided by OS
- Build network applications using client-server model
- Conceptualize network and software vulnerabilities, security loopholes and attacks. Apply these to designing applications and security policies resilient against these vulnerabilities

Instructor Information

Name: Sarker Tanzir Ahmed
Telephone number: 979-845-4908
Email address: tanzir@tamu.edu
Office hours: TBD
Office location: HRBB 205

Textbook and/or Resource Material


Grading Policies

This course will have 3-4 programming projects (45%), a midterm exams (20%), a final exam (20%), writing assignments and/or small programming problems (10%), piazza discussion participation (5%). Projects are individual effort (teamwork not allowed). Late submission of the projects is allowed with a penalty of 15% per day.
Attendance
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It is your responsibility to keep up with the class, even when unexpected events interfere.

Missed Exams
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The midterm exam is scheduled for TBD, in class. The final exam is scheduled according to University Final Examination policy.

Grading Scale

\[
\begin{align*}
A &= 90-100 \\
B &= 80-89 \\
C &= 70-79 \\
D &= 60-69 \\
F &= <60
\end{align*}
\]

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
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<tr>
<td>1-2</td>
<td>Inside a Computer: essential components, Von Neuman model, basic computer organization using combinational and sequential components</td>
<td></td>
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<td>Operating Systems: history, components/features of a modern OS, processes, exceptions, hardware support, API</td>
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</tr>
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<td>Memory subsystem: organization, virtual memory, caching</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Storage subsystem: organization, file representation, file access and permissions</td>
<td></td>
</tr>
<tr>
<td>8-9</td>
<td>Concurrency and Threads: performance, synchronization primitives and data structures, and classic problems</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Inter-Process Communication: message queues, pipes, shared memory, signals, asynchronous programming</td>
<td></td>
</tr>
<tr>
<td>11-12</td>
<td>Computer Networks: history, network infrastructure, mechanisms, and security</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>System Security: vulnerabilities, attacks, and counter measures</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Modern Networks: Software-Defined Networks (SDN), Virtual Network Functions (VNF), data-center networks</td>
<td></td>
</tr>
</tbody>
</table>

Other Pertinent Course Information
The details of the course is given below:

1 **Inside a Computer**

1.1 Essential Components
- Memory (READ/WRITE Operations and on locations specified by Names)
- Interpreter (the processor)
- Communication Links (e.g., (wires, bus, IPC) connecting physically separate things
1.2 Computer Organization
- Von Neuman model of a computer
- Instruction set and Assembly language programming
- High-level programming languages
  - Compiler, assembler, and linker

2 Operating Systems
2.1 A Brief History
- Without-OS systems, sequential processing in batches etc.
- Multiprogramming and time sharing computers
- Historical connection between Multics, Unix, Linux, and OSX

2.2 Modern Operating Systems
- Design goals
- Process abstraction
  - Processor and memory virtualization
  - Process states
  - Process data structure and queues
  - Process API
- Limited Direct Execution
  - Protection rings
  - Dual mode operation, mode switching, security measures
- Event/exception handling
  - System calls
  - Exceptions: faults (e.g., Page Faults) and Aborts (e.g., divide by zero)
  - Interrupts: Interrupts Vector Table, interrupt handling, hardware timers
- Process Scheduling
  - Scheduling metrics
  - Basic methods (FIFO, Round Robin, Shortest Remaining Time First etc.)
  - Multi-level Feedback Queue
- Case Studies
  - Structure of Windows, Linux and Android

3 Memory Subsystem
3.1 Types of memory
- Registers, cache, volatile physical memory, non-volatile memory
- Various memory Technologies, access latencies, and memory hierarchy
- SRAM and DRAM

3.2 Address Space Abstraction
- Memory organization of early Operating Systems: security and performance issues
  - Discrepancy between CPU and disk speed
  - Memory protection of programs and the kernel
  - Frequent reorganization under changing memory demand
- Virtual Memory
  - Motivation: protection, programmer ease, and efficiency
  - Features: private address space, contiguous and pseudo-infinite memory
- Virtual Memory Mechanism
  - Memory pages, page address, memory and disk resident pages, memory pressure
  - Mapping of physical pages to virtual pages using page tables and page faults to support
    over booking
  - Virtual to physical address translation and TLB

3.3 Caching
- Introduction
  - Principle: Hiding/amortizing access latency using spatial and temporal locality
  - Caching at large: web caches, DNS caches, content delivery networks etc.
CPU Caching
- Terminology and definitions
- Caching mechanism: organization, handling misses, handling writes
- Measuring and Improving performance: cache related math problems, set-associative cache, different tradeoffs
- Algorithms for set-associative caches (e.g., FIFO, LRU, RAND) and discussion on their implication beyond CPU caching
- Case study on modern processors: multiple levels of caches, parallelism, and cache coherence

4 Persistent Storage Systems
4.1 Basics
- Technologies and cost-performance trade-offs
  - Tape drives, magnetic disks, ash disks, and SSD
  - Disk blocks, physical and access characteristics of rotational disks
- Design goals
  - Naming, persistence, performance, and controlled sharing of data
- Hierarchical directory structures
  - Relative and absolute paths
  - Directory tree, volumes, partitions, RAID
  - API/commands for directory navigation and file listing
  - Mounting: Importing another directory tree

4.2 UNIX File System Organization
- Disk layout
  - Super block, inode table, data area
- Disk files
  - File layout: metadata in inode and data in disk blocks
  - Creating and reading disk files: Allocating data blocks, inode and directory entry
  - UNIX inode structure
  - File permissions: access lists and groups

4.3 File Input and Output
- File descriptors
- File API
- Data structures and mechanisms
  - Maintaining descriptor table, file table, v-node table, and inode
  - Behavior with fork()
  - I/O redirection
- Standard I/O functions
  - Performance, configurability, buffering and portability

5 Concurrency and Threads
5.1 Concurrency Basics
- Process and thread Context (i.e., PCB and TCB), performance characteristics and race conditions
- Thread API and mechanisms

5.2 Thread Synchronization
- Atomicity, Mutual Exclusion, Critical Section and Locks
  - Synchronized method in Java
  - Hardware support for locks: test-and-set and compare-and-swap
  - Concurrent structures using locks (e.g., list, queues, hash tables): performance tradeoffs
- Thread scheduling and coordination
  - Condition variables and semaphores
  - Producer-consumer on a bounded buffer
- Classic Synchronization Problems
  - The Reader-Writer problem and its variations
5.3 Further Discussion
- Unnecessary threading: Inherently non-scalable problems, false sharing
- Architecture-aware multi-threading: incorporating CPU cache size, core count etc. in programming consideration

6 Inter-Process Communication
6.1 General Communication Methods
- Classes of Communication
  - Synchronous: pipes, message queues
  - Asynchronous: shared memory
- Performance and overhead considerations
- Synchronizing processes using kernel semaphores

6.2 Fixed Length Messages: Signals
- Signal generation
  - Common signals and their use
  - Generating and routing signals
  - API
- Handling signals
  - Process behavior upon receiving: ignore, default action, handle
  - Custom signal handlers
  - Asynchronous programming using signals
  - Signal states: generated, pending, delivered
  - Blocking signals: blocked and pending signal set, API

7 Computer Networks
7.1 Basics
- Brief History
  - Telephony, analog vs digital, switching, multiplexing
  - Major Internet milestones
- Network Hardware and Logistics
  - Internet backbones
  - Hardware organization, Network Interface Cards (NIC), Ethernet, bridges and routers
  - Network types: cluster, local area and wide area networks
  - Network layers and their functions

7.2 Networking Mechanism
- Internet Protocol
  - IP address, address classes, subnet mask
  - Domain Name System (DNS), API
- Internet Connections
  - Basic of client-server model
  - TCP and UDP: relative advantages and disadvantages
  - Port numbers: well-known ports (and services) and ephemeral ports
  - Internet connection between two pairs of IP and port
- A Programmer's View
  - Sockets
  - API discussion
  - TCP and UDP client-server programs
- In-Depth View
  - TCP Protocol: GobackN, Selective Repeat, timeouts, flow control, congestion control
  - IP Protocol: NAT, link-state and distance-vector routing in IP layer

7.3 Network Security
- Significant Attacks and Vulnerabilities
  - Buffer-overflow attack
  - TCP-Syn attack
- Bots and bot-master, spam pages, scam pages, denial-of-service
- Port scanning, man-in-the-middle
- Privacy concerns in ad-based eco system

- Counter Measures
  - Arm’s race between attacks and counter measures
  - OS and software hardening, virtual Machines
  - Spam email filtering, web site certificates, search engine improvements
  - Better programming practices

### 7.4 Modern Networks
- Software Defined Networking
- Virtual Network Function
- Datacenter Networks

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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

Date Submitted: 08/06/19 3:52 pm

Viewing: CSCE 710: Fundamentals of Software Analysis

Last approved: 04/12/19 3:31 am
Last edit: 08/07/19 2:37 pm
Changes proposed by: smilingsheila

Catalog Pages referencing this course
CSCE - Computer Sci. & Engr.
Department of Computer Science and Engineering

Faculty Senate Number FS.36.479

Contact(s)

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

Approval Path
1. 08/07/19 8:14 am
Scott Schaefer
(schaefer): Approved for CSCE Department Head
2. 08/07/19 2:38 pm
Terra Bissett (t.bissett): Approved for Curricular Services Review
3. 08/19/19 2:34 pm
Jennifer Veracruz
(jveracruz): Approved for EN Committee Preparer GR
4. 08/21/19 2:56 pm
Harry Hagan (h-hagan): Approved for EN Committee Chair GR
5. 08/21/19 2:59 pm
Harry Hagan (h-hagan):
Approved for EN College Dean GR
6. 08/27/19 9:35 am
LaRhesa Johnson
(lrjohnson): Approved for GC Preparer
7. 09/05/19 3:25 pm
LaRhesa Johnson
(lrjohnson): Approved for GC Chair

History
1. Apr 12, 2019 by Sheila Dotson (smilingsheila)
The proposed changes are to meet the demand/interest of students.
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>(MS-CPSC) Master of Science in Computer Science</td>
</tr>
<tr>
<td>(MS-CECN) Master of Science in Computer Engineering</td>
</tr>
<tr>
<td>(MS-CEEN) Master of Science in Computer Engineering</td>
</tr>
<tr>
<td>(PHD-CPSC) Doctor of Philosophy in Computer Science</td>
</tr>
<tr>
<td>(PHD-CECN) Doctor of Philosophy in Computer Engineering</td>
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<tr>
<td>(PHD-CEEN) Doctor of Philosophy in Computer Engineering</td>
</tr>
</tbody>
</table>

**Course Syllabus**

- Syllabus: Upload syllabus
  - Upload syllabus: [CSCE 710 syllabus.pdf](710syllabus.pdf)

- Letters of support or other documentation: No

- Additional information: Removing UG prerequisite

- Reviewer Comments: Terra Bissett (t.bissett) (08/07/19 2:37 pm): Syllabus not required for this type of change.

- Reported to state? Add
  - CS
  - No

Key: 18514
MEMORANDUM

TO: Mr. Michael K. Young
President

THROUGH: Dr. Carol A. Fierke
Provost and Executive Vice President

FROM: Dr. Michael J. Benedik
Vice Provost and Chief International Officer

SUBJECT: March 18, 2019 Faculty Senate Items

April 1, 2019

All of the attached March 2019 Faculty Senate items have been reviewed and approved by college, university curriculum, Faculty Senate and Office of the Provost.

New Course Request, Change in Course Request, Change in Programs, Courses–W Certification, Course Withdrawal Requests, and Change in Curriculum Requests
Approval recommended. FS.36.479; FS.36.480; FS.36.481; FS.36.489; FS.36.490; FS.36.491; FS.36.492; FS.36.493; FS.36.494.

FS.36.482: Change in Program–approval recommended. School of Public Health, Department of Health Promotion & Community Health Sciences, MPH-HPCH Master of Public Health in Health Promotion and Community Health Sciences. Request to decrease semester credit hours from 45 to 42. Also see FS.36.487–decrease in SCH being reduced for option to be included in combined degree program with the Bush School of Government & Public Service.
External action: Submit Request to Change Semester Credit Hours form to the System for THECB approval.

FS.36.483: Change in Program–approval recommended. School of Public Health, Department of Health Policy and Management, MPH-PHPM Master of Public Health in Health Policy Management. Request to decrease semester credit hours from 45 to 42. Also see FS.36.487–decrease in SCH being reduced for option to be included in combined degree program with the Bush School of Government & Public Service.
External action: Submit Request to Change Semester Credit Hours form to the System for THECB approval.
FS.36.484: Special Consideration Item—approval recommended. College of Liberal Arts, Department of Psychological and Brain Sciences. CERT-IOPY Industrial-Organizational Psychology – Certificate. New graduate certificate requires 12 SCHs. Request does not surpass maximum allowed by the Texas Administrative Code, Chapter 5, Subchapter C, Rule 5.48. No external action.


Internal action: Approval from Board of Regents. May 13 deadline to submit agenda item to System for August 2019 Board meeting.

External action: Send 50-mile notification after Faculty Senate item is approved; submit required THECB/System paperwork when submitting Board item.

FS.36.486: Special Consideration Item—approval recommended. Bush School of Government & Public Service and School of Public Health, Department of International Affairs and Department of Health Promotion & Community Health Sciences, MIA/MPH-INTA/HPCH-INTA/HPCH Master of International Affairs and Master of Public Health combined degree program. Combined degree program allows student to receive a Master of Public Health degree and a Master of International Affairs degree in a three-year period. Arrangement meets the University regulation contained in the “Guidelines for the Establishment of Two-Degree programs in the Master’s level”. No external action.

FS.36.487: Special Consideration Item—approval recommended. Bush School of Government & Public Service and School of Public Health, Department of International Affairs and Department of Health Policy & Management, MIA/MPH-INTA/PHPM-INTA/PHPM Master of International Affairs and Master of Public Health Combined Degree Program. Combined degree program allows student to receive a Master of Public Health degree and a Master of International Affairs degree in a three-year period. Arrangement meets the University regulation contained in the “Guidelines for the Establishment of Two-Degree programs in the Master’s level”. No external action.

FS.36.488: Special Consideration Item—approval recommended. Bush School of Government & Public Service and School of Public Health, Departments of Public Service & Administration and Health Policy & Management, MPS/PHD-PSAA/HRSA-PSAA/HRSA Master of Public Service and Administration and PhD in Health Services Research Collaborative Degree Program. Collaborative Degree Programs [CDP] [PSAA and HPM] is a coordinated educational effort of the Bush School and the School of Public Health. The CDP is designed to build an academic career focused on conducting research in the multidisciplinary field of health policy and economics. The program will prepare individuals for careers at research universities and teaching colleges as well as for careers in consultancies or research agencies of all types. No external action.
FS.36.495: Course recertification only—approval recommended. Foundational Component Areas: Creative Arts; Language, Philosophy and Culture; and Life & Physical Sciences. No external action.

FS.36.496 and FS.36.497: Intended for review/discussion only. The Faculty Senate did not vote on these items. Both memos were pulled and shredded.

FS.36.498: For Review only. Resolution for Health Assessment Requirement for Consideration of Approval by the Faculty Senate.

Attachments
Course Change Request

Date Submitted: 07/12/19 11:32 am

Viewing: **CSCE 713 : Software Security**

Last approved: 03/30/19 3:32 am

Last edit: 07/12/19 3:14 pm

Changes proposed by: smilingsheila

Catalog Pages referencing this course

- CSCE - Computer Sci. & Engr.
- Department of Computer Science and Engineering

Faculty Senate Number: FS.36.266

Contact(s)

In Workflow

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

Approval Path

1. 07/12/19 1:03 pm
   Scott Schaefer
   (schaefer): Approved for CSCE Department Head
2. 07/12/19 3:17 pm
   Terra Bissett (t.bissett):
   Approved for Curricular Services Review
3. 08/16/19 2:34 pm
   Jennifer Veracruz
   (jveracruz): Approved for EN Committee Preparer GR
4. 08/21/19 2:56 pm
   Harry Hogan (h-hogan):
   Approved for EN Committee Chair GR
5. 08/21/19 2:59 pm
   Harry Hogan (h-hogan):
   Approved for EN College Dean GR
6. 08/27/19 9:35 am
   LaRhesa Johnson
   (lrjohnson): Approved for GC Preparer
7. 09/05/19 3:25 pm
   LaRhesa Johnson
   (lrjohnson): Approved for GC Chair

History

1. Mar 30, 2019 by Karrie Bourquin
   (karrie.bourquin)
**Rationale for Course Edit**

The proposed changes are to meet the demand/interest of students.

<table>
<thead>
<tr>
<th>Course prefix</th>
<th>Course number</th>
<th>Department</th>
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<tbody>
<tr>
<td>CSCE</td>
<td>713</td>
<td>Computer Science &amp; Engineering</td>
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**College/School**

College of Engineering

**Academic Level**

Graduate

Undergraduate

**Effective term**

Fall 2019

**Complete Course Title**

Software Security

**Abbreviated Course Title**

SOFTWARE SECURITY

**Catalog course description**

Basic principles of design and implementation of secure software, code reviews including tool-assisted review by static and dynamic analysis, risk analysis and management, and methods for software security testing.

**Prerequisites and Restrictions**

CSCE 431 or CSCE 606 or approval of instructor; graduate classification.

**Concurrent Enrollment**

No

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

No

**Crosslistings**

No

**Stacked**

No

**Semester Credit Hour(s)**

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<th>Semester</th>
<th>3</th>
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<tbody>
<tr>
<td>Contact Hour(s) (per week):</td>
<td>Lecture: 3</td>
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<tr>
<td>Lab: 0</td>
<td>Other: 0</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
</tr>
</tbody>
</table>

**Repeatable for credit?**

No

**Three-peat?**

No

**CIP/Fund Code**

1107010006

**Default Grade Mode**

Letter Grade (G)

**Alternate Grade Modes**

Satisfactory/Unsatisfactory

**Method of instruction**

Lecture

**Will this course be taught at another branch?**

No

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

Yes

**Learning Outcomes**
Add a justification statement indicating the department/college faculty determined the learning outcomes are appropriate for the course.

While evaluating the student learning outcomes for both the traditional and non-traditional versions of the course, the CSCE Department faculty members reviewed the syllabus, homework assignments, projects, case studies, papers, exams, and other required course deliverables for each course. The faculty considered A) whether the time required for students to complete assigned learning activities and B) whether the qualitative and quantitative expectations for the students were appropriate for degree level, discipline, and weight in the student’s final grade. Based on this evidence, the faculty concluded that the student learning outcomes for the non-traditional course were equivalent to the student learning outcomes for the traditional course.

Hours

Add a justification statement indicating the department/college faculty determined the contact hours are appropriate for the course.

For the non-traditional course offering, the CSCE Department faculty reviewed the other academic activities, which require active faculty engagement with the students, that could be considered equivalent to face-to-face contact hours from TAMU University Rule 11.03.99.M1 Section 2.1. In their review, the faculty considered A) whether the alternate academic activity was required and structured and B) whether the total set of alternate academic activities were sufficient to be considered equivalent to a traditional course. Based on this evidence, the faculty concluded that contact hour requirements for the non-traditional course offering are equivalent to a traditional course.

Will this course be taught as a distance education course?

Yes  No

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:

Required (select program)

Elective (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MEN-CECN) Master of Engineering in Computer Engineering</td>
</tr>
<tr>
<td>(MS-CECN) Master of Science in Computer Engineering</td>
</tr>
<tr>
<td>(MS-CPSC) Master of Science in Computer Science</td>
</tr>
<tr>
<td>(MCS-CPSC) Master of Computer Science in Computer Science</td>
</tr>
</tbody>
</table>

**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus

CSCE 713 Software Security.pdf

713 Software Security Web.pdf

Letters of support or other documentation

No  Yes

Additional information

Reviewer Comments
Reported to state?

Add
CS
No
Course title and number CSCE 713: Software Security
Term (e.g., Fall 200X) Summer 2020
Meeting times and location WEB

Course Description and Prerequisites

Basic principles of design and implementation of secure software, code reviews including tool-assisted review by static and dynamic analysis, risk analysis and management, and methods for software security testing.

Prerequisites: CSCE 431 or CSCE 606 or approval of instructor; Graduate classification

Learning Outcomes or Course Objectives

Students will be able to…
list the first principles of security and explain why each is important to security and how it enables the development of security mechanisms that can implement desired security policies.
identify specific principles that have been violated in common security failures.
identify appropriate design principles to apply in each software development scenario.
explain the interaction between security and system usability and importance of human-computer interfaces to system usability.
explain the importance of secure software and the programming practices, development processes, and methodologies that lead to secure software.
explain techniques for specifying program behavior, the classes of well-known defects, and how they manifest themselves in various languages.
perform penetration testing on previously unknown software.
analyze existing source code for functional correctness.
analyze software for defects using industry standard tools.
develop test cases that demonstrate the existence of defects.
develop defect-free software components that satisfy their functional requirements.

Instructor Information

Name Philip Ritchey
Telephone number TBD
Email address pcr@tamu.edu
Office hours TBD and by appointment
Office location TBD

Textbook and/or Resource Material

Required
None. All required readings are available through TAMU library or the internet.

Recommended
Grading Policies

Late and Missed Work
All absences will be handled according to Texas A&M student rule 7 https://student-rules.tamu.edu/rule07
Late submissions of the project phases are not accepted. The nature of the project does not allow for late submissions: Phase 1 must be completed before Phase 2 can begin and Phase 2 must be completed before Phase 3 can begin.

Late submissions of homework or the report will be penalized 25% of the earned score per day, with incremental days rounding up to full days. For example, an assignment due on 23 September will be penalized 25% for submission any time on 24 September, 50% for submission anytime on 25 September, 75% for submission any time on 26 September, and will not be accepted on or after 27 September (when the penalty would be 100%). Participation is an on-going activity and late participation will generally not be counted.

Grade Assignment and Weighting

<table>
<thead>
<tr>
<th>Weight</th>
<th>Component</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Participation</td>
<td>Weekly</td>
</tr>
<tr>
<td>15%</td>
<td>Homework</td>
<td>TBD</td>
</tr>
<tr>
<td>15%</td>
<td>Quizzes</td>
<td>Weekly</td>
</tr>
<tr>
<td>20%</td>
<td>Annotation Project</td>
<td>TBD</td>
</tr>
<tr>
<td>40%</td>
<td>Project</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Attendance Policy
This course will be taught as a distance course offering. The students can be geographically located anywhere during the course. There are no synchronous lectures to attend. Instead of attendance, students are expected to be active participants on the online course forum, Piazza. Contributions to discussions must be made during the week in which the discussion topic was active.

Makeup Guidelines
Quizzes and Participation can be made up in the event of a documented University Excused Absence. See rule 07 of the student rules: https://student-rules.tamu.edu/rule07.

Participation
Participation in discussion and interaction with other students are both important to your success in this course. I 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.

Homework
Homework assignments mirror the project, but do not share the dependency on prior work and are smaller in scope. The first homework will have the student build a secure software system that will be assessed using a combination of automated and manual testing. The second homework will have the students break (find and exploit bugs) in a software system. The bugs will be verified by an automated system. The third homework will have the students fix a list of bugs found in a software system. The fixes will be verified through automated testing. The score on each assignment corresponds to the proportion of tests passed, bugs found, bugs fixed.
Quizzes
There will be a quiz every week. The topics of the quizzes will vary, including, but not limited to, the assigned reading, the homework, the project, the discussions on Piazza, and current events. The quizzes will be administered through eCampus.

Report
The Report is for students in CSCE 489 to explore a topic in software security in greater depth. Students will choose a topic and select papers and other resources (e.g., blogs, webcasts, podcasts, videos) that pertain to that topic for review and summary. The report should introduce the background, present current issues in the area, discuss proposed solutions from academia and industry, and include the student’s own thoughts and conclusions about the selected topic.

Annotation Project
The Annotation Project is for students in CSCE 689 to explore a topic in software security in greater depth. Students will read a classic paper related to software security and annotate that paper to make it accessible to a broader audience. More specifically, the annotation will give an in-depth account of the historical context of the work along with biographical accounts into the private lives of the author (or authors). The annotation should also help the reader understand the magnitude of the paper’s impact on the field of security. Finally, where appropriate, the annotation should include personal thoughts.

Project
The project is Build it, Break it, Fix it. Students will form teams of 5 or 6. The first phase, Build-It, is to build a secure software system (all teams implementing the same specifications). Completion of the first phase is verified by a set of automated correctness and performance tests. Team submissions must pass all required tests to “qualify” for Phase 2. Points are awarded for passing tests, efficiency, and for implementing extra features (from the specification). The second phase, Break-It, is to break the systems of other teams. All source code will be released to the teams for analysis. Teams earn points by finding, exploiting, and documenting bugs (flaws in design or implementation) in the code of other teams. Teams lose points for each bug found in their code. The third phase, Fix-It, is to fix the bugs in the team’s own submission. All teams will receive the bug reports against their system and must fix as many as they can. Points are restored to the building team and deducted from the breaking teams for each non-unique bug fixed. For example, in the Break-It phase, 4 breaker teams find the same bug in Team A’s code. Team A loses 400 points and each breaker team gains 100 points for that bug. During the Fix-It phase, Team A fixes that bug (and identifies all the teams which submitted the same bug) and recovers 300 points while the breaker teams each lose 75 points. That is, the builder team loses 100 points and each breaker team earn 25 points for that unique bug. This helps to emphasize the value of building security into software rather than patching it in later. Teams which write fewer bugs will lose fewer points. At the end, the team with the most points wins bragging rights.

Doing the minimum required for each phase earns an amount of points equal to 80% of the possible points (not counting bonuses) available in that phase. Additional points are earned by going above and beyond minimum requirements. You are required to use the Texas A&M institutional GitHub service (https://github.tamu.edu) for the project. You must add the instructor and TA/Grader(s) to your repository. Your repository is 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.

Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>D</td>
<td>60-69</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
</tr>
</tbody>
</table>
### Course Topics, Calendar of Activities, Major Assignment Dates

**TAMU Academic Calendar**
https://registrar.tamu.edu/Catalogs-Policies-Procedures/Academic-Calendar

### Course Topics and Calendar of Activities

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Software Security</td>
<td>SSBSI 1: Defining a Discipline</td>
</tr>
<tr>
<td>1</td>
<td>RVV. Security Requirements</td>
<td>SSBSI 8: Abuse Cases&lt;br&gt;Core Security Requirements Artefacts&lt;br&gt;Requirements Engineering for Survivable Systems</td>
</tr>
<tr>
<td>2</td>
<td>RM. Risk Management Framework</td>
<td>SSBSI 2: A Risk Management Framework</td>
</tr>
<tr>
<td>2</td>
<td>D. Secure Design Principles</td>
<td>Principles of Computer System Design 11.1.4: Design Principles</td>
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<td>3</td>
<td>T. Static Analysis</td>
<td>SSBSI 4: Code Review with a Tool&lt;br&gt;A Few Billion Lines of Code Later: Using Static Analysis to Find Bugs in the Real World</td>
</tr>
<tr>
<td>5</td>
<td>RVV. Software Verification and Validation</td>
<td>The verifying compiler: A grand challenge for computing research (watch the lecture at Gresham College) Hacker-Proof Coding</td>
</tr>
<tr>
<td>6</td>
<td>RM. Architectural Risk Analysis / Threat Modeling</td>
<td>SSBSI 5: Architectural Risk Analysis&lt;br&gt;Planning Poker&lt;br&gt;Protection Poker (tutorial)</td>
</tr>
<tr>
<td>7</td>
<td>D. Secure Design Patterns</td>
<td>Secure Design Patterns&lt;br&gt;Software-security patterns: degree of maturity</td>
</tr>
<tr>
<td>9</td>
<td>T. Dynamic Analysis, Fuzzing</td>
<td>KLEE&lt;br&gt;SAGE: Whitebox Fuzzing for Security Testing&lt;br&gt;Alice’s Restaurant</td>
</tr>
</tbody>
</table>

**Topic Legend**

- **D**: Design  
- **SC**: Secure Coding  
- **RM**: Risk Management  
- **T**: Testing  
- **RVV**: Requirements, Verification, Validation

**Major Assignment Dates**

- **Week 1**: Participation Quiz  
- **Week 2**: Homework 1 due  
- **Week 4**: Homework 2 due  
- **Week 5**: Project Build-It due
Week 6: Homework 3 due  
Week 8: Project Break-It due 
Week 9: Report / Annotation Project Due  
Week 10: Project Fix-It due

Other Pertinent Course Information

Office Hours
Office hours will be conducted online using Google Hangouts. Please use your @tamu account when connecting to the office hours hangout.

Typesetting
All written (i.e. non-coding) homework must be typed. You are strongly encouraged to typeset your work using LaTeX. Resources for LaTeX can be found on the course website and on the Internet. Microsoft Word and OpenOffice Write are acceptable, yet vastly inferior, alternatives.

Version Control
You are required to use the Texas A&M institutional GitHub service (https://github.tamu.edu) for the project. You are strongly encouraged to use git for your homework and report, as well.

Submission to eCampus
All assignments will be submitted through eCampus (https://ecampus.tamu.edu). Written assignments must be submitted as PDFs. Submission of source code must follow the instructions in the homework or project specifications.

Piazza
All discussions and announcements will take place on Piazza (https://piazza.com). You should check Piazza often (e.g. every weekday). All questions and comments about the course should be posted on Piazza. Piazza is designed and managed so that you can get help quickly and efficiently from classmates, the PTs, the graders, the TAs, and me. In this class, communication will work as with a large team in a company: everyone has an obligation to chime in and help others by providing information. We will use e-mail only for student-sensitive concerns. If you e-mail a question or comment about the course to me or a TA, you will very likely be redirected to Piazza.

E-mail Formatting
When you send email to me or a TA, the subject must be prefixed with [CSCE 713] and you must sign your name to the email. Putting [CSCE 713] in the subject will let us know in which course of ours you are enrolled. Signing your name will let us know who you are. If you do not sign your name, we may assign you one at random in our reply. You are encouraged to encrypt and sign all emails to me. My PGP public key is on my home page and the MIT key server (https://pgp.mit.edu).

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.”
Course title and number | CSCE 713: Software Security  
Term | Spring 2019  
Meeting times and location | TBD

**Course Description and Prerequisites**
Basic principles of design and implementation of secure software, code reviews including tool-assisted review by static and dynamic analysis, risk analysis and management, and methods for software security testing.

Prerequisites: CSCE 431 or CSCE 606 or approval of instructor; Graduate classification.

**Learning Outcomes or Course Objectives**
Defects in software are sources of vulnerabilities, which in turn are the avenues used by attackers to create and deploy exploits against software. Software defects occur along a continuum between the implementation-level and the design-level. Implementation defects, or bugs, are errors in the source code of software that can result in undefined or incorrect behavior. Design defects, or flaws, are errors in the architecture of software. Software with a flaw will have vulnerabilities even when it is implemented exactly as designed.

Students will be able to…
- **Perform** risk analysis / threat modeling for software security.
- **Translate** security requirements into application design elements including documenting the elements of the software attack surfaces.
- **Apply** security testing tools including fuzzing, static and dynamic analysis, conduct code reviews, and perform penetration testing to identify potential flaws in code.
- **Apply** cybersecurity functions (e.g., encryption, access control, and identity management) to reduce exploitation opportunities.
- **Apply** secure software development life cycle standards and processes.
- **Identify** common coding flaws at a high level.
- **Perform** secure coding and documentation.
- **Conduct** verification and validation of software to ensure that the desired information is produced, and instructions and security levels are correct.
- **Evaluate** technology and standards to identify capabilities required of software.
- **Perform** integrated quality assurance testing for security functionality and resiliency.

**Instructor Information**

| Name | Philip Ritchey  
Telephone number | TBD  
Email address | pcr@tamu.edu  
Office hours | TBD and by appointment  
Office location | TBD
Required
None. All required readings are available through TAMU library or the Internet.

Recommended

Grading Policies

Late and Missed Work
Late submissions of the project phases are not accepted. The nature of the project does not allow for late submissions: Phase 1 must be completed before Phase 2 can begin and Phase 2 must be completed before Phase 3 can begin. In the event of a university excused absence that causes a project milestone to be missed, an alternative project will be assigned.
Late submissions of homework or the report will be penalized 25% of the earned score per day, with incremental days rounding up to full days. For example, an assignment due at 8am on 24 September will be penalized 25% for submission any time after 8am up to 8am on 25 September, 50% for submission anytime up to 8am on 26 September, 75% for submission any time up to 8am on 27 September and will not be accepted after 8am on 27 September (when the penalty would be 100%).
Participation is an on-going activity and late participation will generally not be counted (see Attendance Policy and Makeup Guidelines).

Grade Assignment and Weighting

<table>
<thead>
<tr>
<th>Weight</th>
<th>Component</th>
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</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>Participation</td>
<td>Weekly</td>
</tr>
<tr>
<td>15%</td>
<td>Homework</td>
<td>September, October, November</td>
</tr>
<tr>
<td>15%</td>
<td>Quizzes</td>
<td>Weekly / Biweekly</td>
</tr>
<tr>
<td>20%</td>
<td>Annotation Project</td>
<td>December</td>
</tr>
<tr>
<td>40%</td>
<td>Software Project</td>
<td>October, November, December</td>
</tr>
</tbody>
</table>

Attendance Policy
Distance: When taught as a distance course, the students can be geographically located anywhere during the course. There are no synchronous lectures to attend. Instead of attendance, students are expected to be active participants on the online course forum, Piazza. Contributions to discussions must be made during the week in which the discussion topic was active.
Face-to-face: When taught as a face-to-face course, students are strongly encouraged to attend every class and lab, arrive on time, and stay the whole time. Students are responsible for learning the material covered in class, regardless of attendance. Student who will miss class or lab for any reason are strongly encouraged to notify the instructor by email in advance of the absence.
**Makeup Guidelines**
In-class or in-lab activities, such as Quizzes and Participation, can be made up in the event of a documented University Excused Absence. See rule 07 of the student rules: https://student-rules.tamu.edu/rule07.

**Participation**
Participation in discussion and interaction with other students are both important to your success in this course. I expect you to participate in discussions in class and online. 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.

**Homework**
Homework assignments mirror the project, but do not a strict dependency on prior work. The first homework will have the student build a secure software system that will be assessed using a combination of automated and manual testing. The second homework will have the students break (find and exploit bugs) in a software system. The bugs will be verified by an automated system. The third homework will have the students fix a list of bugs found in a software system. The fixes will be verified through automated testing. The score on each assignment corresponds to the proportion of tests passed, bugs found, bugs fixed. The grade is determined by fitting a 2nd-degree polynomial to the set of points \{((0,0), (AVG, 80), (MAX, 100))\}, where AVG is the average score and MAX is the maximum score, and interpolating:

\[
grade(score) = \max(0, \min(100, A \cdot score^2 + B \cdot score))
\]

\[
B = \frac{80 \cdot MAX - 100 \cdot AVG}{MAX - AVG}
\]

\[
A = \frac{80 - B}{AVG^2 - AVG}
\]

**Quizzes**
There will be a quiz every week or two. The topics of the quizzes will vary, including, but not limited to, the assigned reading, the homework, the project, the discussions on Piazza, and current events. The quizzes will be administered through eCampus.

**Annotation Project**
The Annotation Project is for students to explore a topic in software security in greater depth. Students will read a classic paper related to software security and annotate that paper to make it accessible to a broader audience. More specifically, the annotation will give an in-depth account of the historical context of the work along with biographical accounts into the private lives of the author (or authors). The annotation should also help the reader understand the magnitude of the paper’s impact on the field of security. Finally, where appropriate, the annotation should include personal thoughts.
**Software Project**

The project is *Build it, Break it, Fix it*. Students will form teams of 4 – 6. The first phase, Build-It, is to build a secure software system (all teams implementing the same specifications). Completion of the first phase is verified by a set of automated correctness and performance tests. Team submissions must pass all required tests to “qualify” for Phase 2. Points are awarded for passing tests, efficiency, and for implementing extra features (from the specification). The second phase, Break-It, is to break the systems of other teams. All qualifying source code will be released to the teams for analysis. Teams earn points by finding, exploiting, and documenting bugs (flaws in design or implementation) in the code of other teams. Teams lose points for each bug found in their code. The third phase, Fix-It, is to fix the bugs in the team’s own submission. All teams will receive the bug reports against their system and must fix as many as they can. Points are restored to the building team and deducted from the breaking teams for each non-unique bug fixed. For example, in the Break-It phase, 4 breaker teams find the same bug in Team A’s code. Team A loses 400 points and each breaker team gains 100 points for that bug. During the Fix-It phase, Team A fixes that bug (and identifies all the teams which submitted the same bug) and recovers 300 points while the breaker teams each lose 75 points. That is, the builder team loses 100 points and each breaker team earn 25 points for that unique bug. This helps to emphasizes the value of building security into software rather than patching it in later. Teams which write fewer bugs will lose fewer points. At the end, the team with the most points wins bragging rights.

Doing the minimum required for each phase earns an amount of points equal to 80% of the possible points (not counting bonuses) available in that phase. Additional points are earned by going above and beyond minimum requirements, e.g. optional features and performance.

You are **required** to use the Texas A&M institutional GitHub service ([https://github.tamu.edu](https://github.tamu.edu)) for the project. You must add the instructor and TA/grader(s) to your repository. Your repository is 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.

---

**Grading Scale**

*Final letter grades will be assigned according to the following cutoffs:*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Numerical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≥ 90 (Superior)</td>
</tr>
<tr>
<td>B</td>
<td>≥ 80 (Satisfactory)</td>
</tr>
<tr>
<td>C</td>
<td>≥ 70 (Needs Improvement)</td>
</tr>
<tr>
<td>D</td>
<td>≥ 60 (Unsatisfactory)</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60 (Did Not Participate)</td>
</tr>
</tbody>
</table>

The cumulative numerical grades from graded assignments are normalized to 100 points and curved.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Software Security</td>
<td>SSBSI 1: Defining a Discipline</td>
</tr>
<tr>
<td>2</td>
<td><strong>RVV. Abuse Cases, Security Requirements</strong></td>
<td>SSBSI 8: Abuse Cases&lt;br&gt;Capturing Security Requirements for Software Systems&lt;br&gt;Core Security Requirements Artefacts&lt;br&gt;Requirements Engineering for Survivable Systems</td>
</tr>
<tr>
<td>3</td>
<td><strong>RM. A Risk Management Framework</strong></td>
<td>SSBSI 2: A Risk Management Framework</td>
</tr>
<tr>
<td>4</td>
<td><strong>D. Secure Design Principles</strong></td>
<td>Principles of Computer System Design 11.1.4: Design Principles</td>
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<tr>
<td>5</td>
<td><strong>T. Static Analysis</strong></td>
<td>SSBSI 4: Code Review with a Tool&lt;br&gt;A Few Billion Lines of Code Later: Using Static Analysis to Find Bugs in the Real World</td>
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<tr>
<td>7</td>
<td><strong>RVV. Software Verification and Validation</strong></td>
<td>The verifying compiler: A grand challenge for computing research (watch the lecture at Gresham College)&lt;br&gt;Hacker-Proof Coding</td>
</tr>
<tr>
<td>8</td>
<td><strong>RM. Architectural Risk Analysis / Threat Modeling</strong></td>
<td>SSBSI 5: Architectural Risk Analysis&lt;br&gt;Planning Poker&lt;br&gt;Protection Poker (tutorial)</td>
</tr>
<tr>
<td>9</td>
<td><strong>D. Secure Design Patterns</strong></td>
<td>Secure Design Patterns&lt;br&gt;Software-security patterns: degree of maturity</td>
</tr>
<tr>
<td>10</td>
<td><strong>T. Dynamic Analysis, Fuzzing</strong></td>
<td>KLEE</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>SC. Porous Defenses</td>
<td>SANS Top 25 Software Errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 16: Executing Code with Too Much Privilege</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 17: Failure to Protect Stored Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 21: Using Cryptography Incorrectly</td>
</tr>
<tr>
<td>13</td>
<td>Thanksgiving Break</td>
<td>Alice's Restaurant</td>
</tr>
<tr>
<td>14</td>
<td>SC. Insecure Interaction Between Components</td>
<td>SANS Top 25 Software Errors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 1: SQL Injection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 2: Web Server-Related Vulnerabilities (XSS, CSRF, Response Splitting)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24DSSS 3: Web Client-Related Vulnerabilities (XSS)</td>
</tr>
</tbody>
</table>

**Topic Legend**

- **D**: Design
- **SC**: Secure Coding
- **RM**: Risk Management
- **T**: Testing
- **RVV**: Requirements, Verification, Validation

**Major Assignment Dates**

- **Weekly**: Participation
- **(Bi-)Weekly**: Quiz
- **late September**: Homework 1 due
- **mid October**: Homework 2 due
- **late October**: Project Build-It due
- **early November**: Homework 3 due
- **mid November**: Project Break-It due
- **early December**: Report / Annotation Project Due
- **Project Fix-It due**

**Additional Pertinent Course Information**

**Office Hours**

- **Distance**: Office hours will be conducted online using Google Hangouts. Please use your @tamu account when connecting to the office hours hangout. On-campus student can also utilize face-to-face office hours.
- **Face-to-face**: Office hours are regularly held in the time and place listed above (Instructor Information). In the event my office hours need to be modified or cancelled, there will be a pinned post on Piazza that lists the date and time of the modified/cancelled office hours. To schedule an office hours appointment: send me an email or go to [https://calendly.com/pcr](https://calendly.com/pcr) to schedule an appointment.

**Typesetting**

All written (i.e. non-coding) assignments must be typed. You are strongly encouraged to typeset your work using LaTeX.
Resources for LaTeX can be found on the course website and on the Internet. Microsoft Word and OpenOffice Write are acceptable, yet vastly inferior, alternatives.

**Version Control**
You are **required** to use the Texas A&M institutional GitHub service ([https://github.tamu.edu](https://github.tamu.edu)) for the project. You are strongly encouraged to use git for your homework and report, as well.

**Submission to eCampus**
All assignments will be submitted through eCampus ([https://ecampus.tamu.edu](https://ecampus.tamu.edu)). Written assignments must be submitted as PDFs or plaintext (.txt). Submission of source code must follow the instructions in the homework or project specifications.

**Piazza**
**Distance:** All discussions and announcements will take place on Piazza ([https://piazza.com](https://piazza.com)). Otherwise, follow the face-to-face Piazza policy.
**Face-to-face:** You should check Piazza often (e.g. every weekday). All questions and comments about the course should be posted on Piazza. Piazza is designed and managed so that you can get help quickly and efficiently from classmates, the PTs, the graders, the TAs, and me. In this class, communication will work as with a large team in a company: everyone has an obligation to chime in and help others by providing information. We will use e-mail only for student-sensitive concerns. If you e-mail a question or comment about the course to me or a TA, you will very likely be redirected to Piazza.

**E-mail Formatting**
When you send email to me or a TA, the subject must be prefixed with [CSCE 651] and you must sign your name to the email. Putting [CSCE 651] in the subject will let us know in which course of ours you are enrolled. Signing your name will let us know who you are. If you do not sign your name, we may assign you one at random in our reply. You are encouraged to encrypt and sign all emails to me. My PGP public key is on my home page, the SKS keyserver pool ([http://pool.sks-keyservers.net/](http://pool.sks-keyservers.net/)) and the Ubuntu keyserver ([https://keyserver.ubuntu.com](https://keyserver.ubuntu.com)).

**Discussion of Grades**
Federal law prohibits the instructor, TAs, and graders from discussing grades over non-TAMU email. If you have a question about your grade, the preferred mechanism is to meet with us in-person, such as during office hours.

**Harassment and Discrimination**
Texas A&M is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, Texas A&M encourages a climate that values and nurtures collegiality, diversity, pluralism and the uniqueness of the individual within our state, nation and world. All decisions and actions involving students and employees should be based on applicable law and individual merit.

Texas A&M University prohibits harassment and discrimination against any member of the University community based on race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran.
Students who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the Office of the Dean of Student Life at 979-845-3113.

_Diversity and Inclusion_
In an ideal world, science would be objective. However, much of science is subjective and is historically built on a small subset of privileged voices. I acknowledge that it is possible that there may be both overt and covert biases in the material due to the lens with which it was written, even though the material is primarily of a scientific nature. Integrating a diverse set of experiences is important for a more comprehensive understanding of science. Occasionally, as part of the course, I would like to discuss issues of diversity in computer science.

I (like many people) am still in the process of learning about diverse perspectives and identities. I would like to create a learning environment for my students that supports a diversity of thoughts, perspectives and experiences, and honors your identities (including race, gender, class, sexuality, ability, etc.) To help accomplish this:

- If you have a preferred name that differs from what appears in your official Texas A&M records, please let me know.
- If you have a set of pronouns you use, please let me know. For example, I use the pronouns he/him/his.
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don’t hesitate to come and talk with me.
- If something was said in class that made you feel uncomfortable, please talk to me about it. As a participant in course discussions, you should also strive to value the diversity of your classmates.
- You can also submit anonymous feedback (which will lead to me making a general announcement to the class, if necessary, to address your concerns). If you prefer to speak with someone outside of the course, the Texas A&M Office for Diversity is an excellent resource.

Please contact me or submit anonymous feedback if you have any suggestions to improve the quality of the course materials.
### 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

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

For all academic work in this and every course, it is expected of you that you shall neither give nor receive any unauthorized aid.

All violations of the Aggie code of Honor will be reported to the Aggie Honor System Office.

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 Aggie Honor System Office, regardless of whether the actual code or data is copied or not.

Things you should not do include, but are not limited to:

- Submit your own or another student's work from a previous semester.
- Copy any portion of another student's work.
- Tell another student what is on an assessment before that student has taken the assessment.
- Find the solution to an assignment online and copy any part of it.

For more information, see [https://aggiehonor.tamu.edu/](https://aggiehonor.tamu.edu/).

Last Updated: 8 November 2018
ECMT 678: Advanced Topics in Econometrics

Nonparametric Econometrics

Approvals Path

1. 05/10/19 9:58 am
   Silvana Krasteva (ssk8): Approved for ECON Reviewer GR
2. 05/10/19 10:07 am
   Timothy Gronberg (tgronberg): Approved for ECON Department Head
3. 05/13/19 4:25 pm
   Terra Bissett (t.bissett): Approved for Curricular Services Review
4. 05/15/19 12:56 pm
   Sarah Frankie (sfranke): Approved for LA Committee Preparer GR
5. 07/26/19 12:19 pm
   Maria Escobar-Lemmon (m_escobar): Approved for LA Committee Chair GR
6. 07/26/19 12:20 pm
   Maria Escobar-Lemmon (m_escobar): Approved for LA College Dean GR
7. 07/29/19 10:01 am
   LaRhesa Johnson (ljohnson): Approved for GC Preparer
8. 09/04/19 8:14 am
   LaRhesa Johnson (ljohnson): Approved for GC Chair
The proposed changes are part of a routine curriculum review.
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)

**Course Syllabus**

Syllabus: Upload syllabus

Upload syllabus

Letters of support or other documentation No

Additional information

Reviewer Comments Terra Bisset (t.bissett) (05/13/19 4:23 pm): Minor edits made to abbreviated title and catalog course description to comply with catalog style guide.

Reported to state? Change-Title CS

Key: 4469
Course Change Request

Date Submitted: 06/27/19 4:12 pm

Viewing: EPSY 689: Special Topics in...

Last edit: 08/01/19 11:02 am

Changes proposed by: skallina

Catalog Pages
Department of Educational Psychology
EPSY - Educational Psychology

Faculty Senate Number

Contact(s)
Sally Kallina skallina@tamu.edu 979-845-1833

Approval Path
1. 07/31/19 5:37 pm
   Shanna Hagan-Burke (shaganburke):
   Approved for EPSY Department Head
2. 08/01/19 11:02 am
   Sandra Williams (sandra-williams):
   Approved for Curricular Services Review
3. 08/01/19 3:38 pm
   Melanie Robideau (mrobideau): Approved for ED Committee Preparer GR
4. 08/13/19 2:46 pm
   Beverly Irby (irbby):
   Approved for ED Committee Chair GR
5. 08/13/19 2:47 pm
   Beverly Irby (irbby):
   Approved for ED College Dean GR
6. 08/27/19 9:36 am
   LaRhesa Johnson (krjohnson): Approved for GC Preparer
7. 09/05/19 3:25 pm
   LaRhesa Johnson (krjohnson): Approved for GC Chair

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sally Kallina</td>
<td><a href="mailto:skallina@tamu.edu">skallina@tamu.edu</a></td>
<td>979-845-1833</td>
</tr>
</tbody>
</table>

Rationale for Course Edit
The proposed changes are part of a routine curriculum review.
### Course Information

<table>
<thead>
<tr>
<th>Course prefix</th>
<th>EPSY</th>
<th>Course number</th>
<th>689</th>
</tr>
</thead>
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<tr>
<td>Department</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>College/School</td>
<td>Education &amp; Human Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Level</td>
<td>Graduate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Level (alternate)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Effective term</td>
<td>Fall 2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Course Title</td>
<td>Special Topics in...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abbreviated Course Title</td>
<td>SPECIAL TOPICS IN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Catalog Course Description

Selected topics in an identified area of educational psychology.

### Prerequisites and Restrictions

Graduate classification. Approval of department head.

### Contact Hour(s) (per week):

| Lecture: | 1-4 |
| Lab: | 0 |
| Other: | 0 |
| Total | 1-4 |

### Repeatable for credit?

Yes

### Number of times repeated for credit - OR - Maximum number of hours

990

### When will this course be repeated?

Special Topics (X89) and Seminars (X81)

### Three-peat?

Yes

### CIP/Fund Code

4228060004

### Default Grade Mode

Letter Grade (G)

### Alternate Grade Modes

Satisfactory/Unsatisfactory

### Method of instruction

Lecture

Lecture and Laboratory

### Will this course be taught at another branch?

No

### 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)

Course Syllabus

Syllabus: Upload syllabus

Upload syllabus

Letters of support or other documentation No

Additional information

Reviewer Comments

Reported to state? CS

No

Key: 6064
Course Change Request

Date Submitted: 07/11/19 3:51 pm

Viewing: **PETE 681 : Seminar**

Last approved: 02/01/18 3:25 am
Last edit: 07/16/19 5:06 pm

Changes proposed by: e-schuler

**Catalog Pages referencing this course**

Harold Vance Department of Petroleum Engineering

PETE - Petroleum Engineering

**Faculty Senate Number**

Contact(s)

---

**In Workflow**

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

**Approval Path**

1. 07/01/19 12:36 pm
   Kathy Beladi (k-beladi): Approved for PETE Department Head
2. 07/03/19 11:29 am
   Sandra Williams (sandra-williams): Rollback to Initiator
3. 07/09/19 4:41 pm
   Kathy Beladi (k-beladi): Approved for PETE Department Head
4. 07/11/19 1:22 pm
   Terra Bissett (t.bissett): Rollback to Initiator
5. 07/11/19 3:56 pm
   Kathy Beladi (k-beladi): Approved for PETE Department Head
6. 07/17/19 9:10 am
   Terra Bissett (t.bissett): Approved for Curricular Services Review
7. 08/16/19 2:35 pm
   Jennifer Veracruz (jveracruz): Approved for EN Committee Preparer GR
8. 08/21/19 2:55 pm
   Harry Hogan (h-hogan): Approved for EN Committee Chair GR
9. 08/21/19 2:59 pm
   Harry Hogan (h-hogan): Approved for EN College Dean GR
10. 08/27/19 9:38 am

---
Rationale for Course Edit
The proposed changes are part of a routine curriculum review.

Course prefix: PETE  
Course number: 681
Department: Petroleum Engineering
College/School: College of Engineering
Academic Level: Graduate (alternate)
Effective term: Fall 2020
Complete Course Title: Seminar
Abbreviated Course Title: SEMINAR

Catalog course description:
Presentations by experts in petroleum technologies. Credit 1 each semester. Study and presentation of papers on recent developments in petroleum technology.

Prerequisites and Restrictions:
Concurrent Enrollment: No
Should catalog prerequisites / concurrent enrollment be enforced?: No
Crosslistings: No
Stacked: No

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

Repeatable for credit?: Yes
Number of times repeated for credit: - OR - Maximum number of hours: 990
When will this course be repeated?: Special Topics (X89) and Seminars (X81)
Three-peat? Yes

CIP/Fund Code: 1425010006
Default Grade Mode: Satisfactory/Unsatisfactory (S)
Alternate Grade Modes
Method of instruction: Seminar
Will this course be taught at another branch?

No

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>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MEN-PETE) Master of Engineering in Petroleum Engineering</td>
</tr>
<tr>
<td>(MS-PETE) Master of Science in Petroleum Engineering</td>
</tr>
<tr>
<td>(PHD-PETE) Doctor of Philosophy in Petroleum Engineering</td>
</tr>
</tbody>
</table>

Course Syllabus

Syllabus: Upload syllabus

Upload syllabus

PETE 681 Updated Syllabus_7_9.pdf

Letters of support or other documentation

No

Additional information

Reviewer Comments

Duane McVay (mcvay) (02/20/18 6:06 pm): Rollback: Credit hours

Sandra Williams (sandra-williams) (03/02/18 9:28 am): Rollback: Changing in hours require a syllabus to be attached.

Sandra Williams (sandra-williams) (04/04/18 12:05 pm): Rollback: Please update catalog course description to conform to our 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) (07/03/19 11:29 am): Rollback: See previous comments: Please update catalog course description to conform to our catalog style guide for course descriptions. http://registrar.tamu.edu/Our-Services/Curricular-Services/Catalog/Style-Guide-for-Catalog-Course-Descriptions

Terra Bissett (t.bissett) (07/11/19 1:22 pm): Rollback: Previous comments not addressed.

Terra Bissett (t.bissett) (07/17/19 9:10 am): Updates received. Minor edits made to catalog course description to comply with catalog style guide.

Reported to state?

Change-Hours

CS

Key: 12512
Course title and number: PETE 681 Graduate Seminar
Term: Fall 2019
Meeting times and location: Tuesday’s 3:55 – 5:10pm in RICH 101

Course Description and Prerequisites

PETE 681, Seminar. (Zero Credit Hours) Presentations by experts in petroleum technologies; questions and answers by students at end of presentations

Learning Outcomes

(A learning outcome is defined as a statement of what the student will know or be able to do upon successfully completing the course. It must be both observable and measureable. The outcomes may include competencies developed in the course. Learning outcomes define what students need to do to show mastery of course materials. Additional assistance with learning outcomes is available through the Center for Teaching Excellence http://cte.tamu.edu and the Office of Institutional Assessment https://assessment.tamu.edu/)

Course Learning Outcomes: At the end of the course, students will be able to...

<table>
<thead>
<tr>
<th>Possible Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3,5</td>
</tr>
<tr>
<td>1,5,11</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>1,3,5</td>
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<td>5</td>
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<tr>
<td>5</td>
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<tr>
<td>3,5</td>
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</tbody>
</table>

Exposé and Visualize different research visions of petroleum engineering related research problems
Evaluate the solution methodologies provided by the seminar speakers and integrate those methodologies into their MSc and PhD studies
Gain presentation skills by observing the presentations of different research areas.
Improve and Update their knowledge according to the current developments in the petroleum engineering fields
Improve their communication skills by interacting with the seminar speakers
Evaluate and Analyze the Texas A&M resources provided for them throughout their research studies to publish higher quality research
Build networking skills

Related Program Outcomes:

<table>
<thead>
<tr>
<th>No.</th>
<th>PETE graduates must have...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An ability to apply knowledge of</td>
</tr>
</tbody>
</table>
mathematics, science, and engineering.

| 3 | 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. |
| 5 | An ability to identify, formulate, and solve engineering problems. |
| 11 | An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. |

**Instructor Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dr. Kan Wu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone number</td>
<td>979-862-7654</td>
</tr>
<tr>
<td>Email address</td>
<td><a href="mailto:kan.wu@tamu.edu">kan.wu@tamu.edu</a></td>
</tr>
<tr>
<td>Office hours</td>
<td>Anytime when the door is wide open</td>
</tr>
<tr>
<td>Office location</td>
<td>Richardson 501Q</td>
</tr>
</tbody>
</table>

**Course Facilitators:**

- Eleanor Schuler; e-schuler@tamu.edu; 979-845-8402, RICH 401 U &
- Barbi Miller; barbi.miller@tamu.edu; 979-845-2287, RICH 401W

**Required Textbook:** None

**Grading Policies**

(Must include a grading scale (A=90-100%, B=80-89%, etc.). Include weights as applicable to exams, laboratory assignments, field student work, projects, papers, homework, class attendance and participation, and other graded activities in the calculation of the course grade. If more than 10% of grade is based on participation, syllabus should explicitly define and outline how grade is determined. Stacked courses – syllabus must clearly indicate additional work required for graduate students. Changing grading policies should occur only under extraordinary circumstances.

Your grading is based on your attendance. The passing grade is S (Satisfactory) and non-passing grade is U (Unsatisfactory). There will be 13 classes throughout Fall 2019 semester. Students have to attend at least 11 of those classes to earn passing grade. Students must sign the attendance sheets, otherwise, they will be counted as absent. If students miss any classes during withdraw period, those missed classes will be counted as absence.

**Attendance and Make-up Policies**

(Include website link to student rule 7 [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). Must include attendance and make-up policy, especially if attendance/class participation will count as a grade. Policies should detail excused absences, unexcused absences, and make-up policies. Attendance and make-up policies should not contradict student rules.

**Attendance is mandatory for PETE 681.** Texas A&M views class attendance as an individual
Excused Absences: Rules concerning excused absences may be found at http://student-rules.tamu.edu/rule07. Except for absences due to religious obligations, the student must notify her or his instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence, if such notification is feasible. In cases where advance 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. This notification should include an explanation of why notice could not be sent prior to the class.

Excused Absences for Religious Holy Days: Texas House Bill (effective 9/1/03) states “An institution of higher education shall excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable amount of time after the absence.”

Course Topics, Calendar of Activities, Major Assignment Dates
(14 weeks - 15th week is first week of finals. Include lab hours. Must include dates on which major exams will be given and assignments will be due and should not be changed without notification of all students in the course.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/27/19</td>
<td>Speaker: TBD</td>
<td></td>
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<tr>
<td>11/19/19</td>
<td>Speaker: TBD</td>
<td></td>
</tr>
</tbody>
</table>

Exams and Assignments: There will be no exams, but there might be pop quizzes

Other Pertinent Course Information

Classroom Behavior: Texas A&M University supports the principle of freedom of expression for both instructors and students. The university respects the rights of the instructors to teach and the students to learn. Maintenance of these rights requires classroom conditions that do not
impede their exercise. Classroom behavior that seriously interferes with either (1) instructor’s ability to conduct the class or (2) the ability of other students to profit from the instructional program will not be tolerated. An individual engaging in disruptive classroom behavior may be subject to disciplinary action. For additional information please visit http://student-rules.tamu.edu/rule21.

Coursework Copyright Statement: (Texas A&M University Policy Statement) Video recording is not allowed throughout semester. Because these materials are copyrighted, you do not have the right to record them, unless you are expressly granted permission. If you have any questions about plagiarism and/or copying, please consult the latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty”.

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.”
Course Change Request

Date Submitted: 06/27/19 4:38 pm

Viewing: SPSY 691: Research
Last approved: 01/12/17 5:01 pm
Last edit: 07/18/19 9:38 am
Changes proposed by: skallina

Catalog Pages
SPSY - School Psychology
referencing this course

Faculty Senate Number

Contact(s)

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

Approval Path
1. 07/17/19 2:26 pm
   Shanna Hogan-Burke (shoganburke):
   Approved for EPSY Department Head
2. 07/18/19 9:39 am
   Terra Bissett (t.bissett):
   Approved for Curricular Services Review
3. 07/22/19 10:39 am
   Melanie Robideau (mrobideau):
   Approved for ED Committee Preparer GR
4. 08/13/19 2:46 pm
   Beverly Irby (rirtyb):
   Approved for ED Committee Chair GR
5. 08/13/19 2:47 pm
   Beverly Irby (rirtyb):
   Approved for ED College Dean GR
6. 08/27/19 9:38 am
   LaRhesa Johnson (lrjohnson):
   Approved for GC Preparer
7. 09/05/19 3:26 pm
   LaRhesa Johnson (lrjohnson):
   Approved for GC Chair

History
1. Jan 12, 2017 by
   sarah.gordon
Rationale for Course Edit
The proposed changes are part of a routine curriculum review.

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sally Kallina</td>
<td><a href="mailto:skallina@tamu.edu">skallina@tamu.edu</a></td>
<td>979-845-1833</td>
</tr>
</tbody>
</table>

Course prefix: SPSY  
Course number: 691  
Department: Educational Psychology  
College/School: Education & Human Development  
Academic Level: Graduate  
Effective term: Fall 2020  

Complete Course Title: Research  
Abbreviated Course Title: RESEARCH

Catalog course description: Credit 1 or more each semester. Research for thesis or dissertation.

Prerequisites and Restrictions: Approval of instructor, department head.

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

Semester: 1-23  
Contact Hour(s) (per week): Lecture: 0  
Lab: 0  
Other: 1-23  
Total: 1-23

Repeatable for credit?: Yes  
Number of times repeated for credit: - OR -  
Maximum number of hours: 990
When will this course be repeated?: Within the same semester
Three-peat?: Yes

CIP/Fund Code: 4228050001  
Default Grade Mode: Satisfactory/Unsatisfactory (S)
Alternate Grade Modes
Method of instruction: Research
Will this course be taught at another branch?: No
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 course?: No
education course? Yes
Is 100% of this course going to be taught in Texas?
Will classroom space be needed for this course?
This will be a required course or an elective course for the following programs:
Required (select program)
Elective (select program)

Course Syllabus

Syllabus: Upload syllabus
Upload syllabus

Letters of support or other documentation: No
Additional information
Reviewer Comments
Reported to state?
No