Course Change Request

New Course Proposal

Date Submitted: 02/07/18 1:38 pm

Viewing: CSCE 710 : Fundamentals of Software Analysis

Last edit: 02/15/19 10:19 am
Changes proposed by: smilingsheila

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheila Dotson</td>
<td><a href="mailto:dotson@tamu.edu">dotson@tamu.edu</a></td>
<td>979-845-6176</td>
</tr>
</tbody>
</table>

Course prefix: CSCE  
Course number: 710

Department: Computer Science & Engineering
College/School: College of Engineering
Academic Level: Graduate
Effective term: 2019-2020

Complete Course Title: Fundamentals of Software Analysis
Abbreviated Course Title: FUNDAMENTAL SOFTWARE ANALYSIS

Catalog course description:
Development of advanced concepts in program analyses; program abstraction, data-flow analysis, type systems, verification, testing, concurrency, reliability, fault detection; tools and empirical experimentation for program analyses.

Prerequisites and Restrictions:
CSCE 434 or approval of instructor.

Should catalog prerequisites / concurrent enrollment be enforced? Yes

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. 02/13/18 8:32 am Scott Schaefer (schaefer): Approved for CSCE Department Head
2. 02/13/18 10:45 am Sandra Williams (sandra-williams): Approved for Curricular Services Review
3. 02/16/18 4:58 pm Jennifer Veracruz (jveracruz): Approved for EN Committee Preparer GR
4. 02/28/18 5:27 pm Prasad Enjeti (enjeti): Approved for EN Committee Chair GR
5. 02/28/18 5:31 pm Prasad Enjeti (enjeti): Approved for EN College Dean GR
6. 03/26/18 8:59 am Meagan Kelly (meagankelly): Approved for GC Preparer
7. 04/05/18 3:23 pm LaRhessa Johnson (lrjohnson): Approved for GC Chair
8. 04/11/18 3:28 pm helgoth: Approved for Faculty Senate Preparer
9. 05/15/18 3:52 pm Janet Gonzales (janet-
Enforced Prerequisites / Concurrent Enrollment

<table>
<thead>
<tr>
<th>And/Or</th>
<th>Course Prefix/Number</th>
<th>Min Grade/Score</th>
<th>Academic Level</th>
<th>Concurrency?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crosslistings</td>
<td>CSCE 434</td>
<td>C</td>
<td>UG</td>
<td></td>
</tr>
</tbody>
</table>

Crosslisted With

Stacked

Semester: 3
Credit Hour(s): 3
Contact Hour(s) (per week): Lecture: 3 Lab: 0 Other: 0 Total: 3
Repeatable for credit? No
CIP/Fund Code: 1102010006
Default Grade Mode: Letter Grade (G)
Method of instruction: Lecture
Will sections of this course be taught as non-traditional? (i.e., parts of term, distance education) No

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

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

### Program(s)

- (MS-CPSC) Master of Science in Computer Science
- (MS-CECN) Master of Science in Computer Engineering
- (MS-CEEN) Master of Science in Computer Engineering
- (PHD-CPSC) Doctor of Philosophy in Computer Science
- (PHD-CECN) Doctor of Philosophy in Computer Engineering
- (PHD-CEEN) Doctor of Philosophy in Computer Engineering
Course Syllabus

Syllabus: Upload syllabus
Upload syllabus 710 syllabus.pdf

Letters of support or other documentation No

Additional information

Reviewer Comments
Sandra Williams (sandra-williams) (02/07/18 10:40 am): Rollback: Syllabus: late work policy penalties - what about university excused absences? Also, missing link to student rule 7 on excused absences.
Sandra Williams (sandra-williams) (02/13/18 10:45 am): Moving forward, however, late policy was not updated on syllabus. It reads: "Late Policy: The late submission will have 2% penalty for each hour after the due time." What about University excused absences?
Linda Newman (lnewman) (02/15/19 10:16 am): Course could not be found on the 2018 April/May agendas. Item will be rolled back to Faculty Senate Preparer role to be added to the March agenda for approval.
Linda Newman (lnewman) (02/15/19 10:19 am): Rollback: Course could not be found on the 2018 April/May agendas. Item is being rolled back to Faculty Senate Preparer page to add to the 2019 March agenda for approval.
Course title and number        CSCE 710 Fundamentals of Software Analysis
Term (e.g., Fall 200X)         Fall 2017
Meeting times and location    TBD

Course Description and Prerequisites
Development of advanced concepts in program analyses; program abstraction, data-flow analysis, type systems, verification, testing, concurrency, reliability, fault detection; tools and empirical experimentation for program analyses. Prerequisite: CSCE 434 or approval of instructor.

Learning Outcomes or Course Objectives
The intent of this course is to offer the in-depth introduction to graduate students on a wide range of software analysis concepts and techniques. The topics can be explored at different levels of depths depending on the interests of the class. The content of the course is roughly divided into two general themes: program representation and program analysis. Following the first theme, we study different abstractions, representations, and interpretations of a software program itself. Following the second, we study how analysis techniques and algorithms can help interpret the runtime meaning of the program and, in turn, help us monitor and improve the quality of the software programs.

Instructor Information
Name: Jeff Huang
Telephone number: 979-845-5485
Email address: jeff@cse.tamu.edu
Office hours: TBA
Office location: 427C HRBB

Textbook and/or Resource Material
There is no required textbook; all relevant materials will be made available online.


Grading Policies
The course will be evaluated based on a combination of participation, hands-on effort, homework, understanding of cutting-edge research results and examination. The mark breakdown is as follows.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lecture Participation</td>
<td>10%</td>
</tr>
<tr>
<td>2 Home Work</td>
<td>20%</td>
</tr>
<tr>
<td>3 Course Project</td>
<td>50%</td>
</tr>
<tr>
<td>4 Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>
Grading Scale

A ≥ 90% > B ≥ 80% > C ≥ 70% > D ≥ 60% > F

Late Policy: The late submission will have 2% penalty for each hour after the due time.

Project

A major component of the course is a software development project. It is essentially a mini research project that may involve building a new system, designing a new algorithm, improving an existing technique, applying an existing technique to a new domain, or performing a large case study. You are encouraged to come up with a topic of your own, which I’ll help refine; alternatively, you can choose one of the projects I suggest. You can work on your project alone or with a partner; The timeline of the project will be posted on the course webpage.

Attendance and Make-up Policies

Students are expected to attend all scheduled classes. Make-up lessons for excused absences will be arranged with instructor. Absences may only be excused by the Texas A&M University Student Rules available at http://student-rules.tamu.edu/rule07.

Course Topics, Calendar of Activities, Major Assignment Dates

Note: this is a tentative schedule only; please refer to the course webpage for accurate information.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Data flow analysis and abstract interpretation frameworks</td>
<td>PPA Ch. 2 (optional)</td>
</tr>
<tr>
<td>3</td>
<td>Constraint-based analysis</td>
<td>PPA Ch. 3 (optional)</td>
</tr>
<tr>
<td>4</td>
<td>Type and effect systems</td>
<td>PPA Ch. 5 (optional)</td>
</tr>
<tr>
<td>5</td>
<td>Data and control flow analyses with Soot</td>
<td>Soot tutorial</td>
</tr>
<tr>
<td>6</td>
<td>Pointer analysis</td>
<td>Doop tutorial</td>
</tr>
<tr>
<td>7</td>
<td>Call graph construction</td>
<td>WALA tutorial</td>
</tr>
<tr>
<td>8</td>
<td>Symbolic execution</td>
<td>KLEE tutorial</td>
</tr>
<tr>
<td>9</td>
<td>Dynamic analysis</td>
<td>ASM tutorial</td>
</tr>
<tr>
<td>10</td>
<td>Testing and debugging</td>
<td>DART tutorial</td>
</tr>
<tr>
<td>11</td>
<td>Verification, Hoare logic, Separation logic</td>
<td>SLAM tutorial</td>
</tr>
<tr>
<td>12</td>
<td>Concurrency fundamentals</td>
<td>Lecture notes</td>
</tr>
<tr>
<td>13</td>
<td>Data race detection</td>
<td>RVPredict tutorial</td>
</tr>
<tr>
<td>14</td>
<td>Student Projects</td>
<td>Nones</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.”
New Course Proposal

Course Change Request

Date Submitted: 12/20/18 7:08 am

Viewing: OBIO 613: Interactive Writing and Grant Proposals

Last edit: 12/20/18 7:08 am
Changes proposed by: kluttman

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim Luman</td>
<td><a href="mailto:kluttman@tamhsc.edu">kluttman@tamhsc.edu</a></td>
<td>214 828 8182</td>
</tr>
</tbody>
</table>

Course prefix | Course number
---------------|---------------
OBIO           | 613

Department | College of Dentistry
College/School | Dentistry
Academic Level | Graduate
Effective term | 2020-2021

Complete Course Title
Interactive Writing and Grant Proposals

Abbreviated Course Title
INTERACTIVE WRITING & GRANTS

Catalog course description
Interactive writing, produce National Institutes of Health (NIH) formatted grant.

Prerequisites and Restrictions
Admission to MS or PhD in Oral Biology.

Should catalog prerequisites / concurrent enrollment be enforced?
No

Crosslistings
No

Stacked
No

Semester | Credit Hour(s) | Contact Hour(s) (per week) | Lecture | Lab | Other |
----------|----------------|---------------------------|---------|-----|-------|
1         |                |                           | 1       | 0   | 0     |

Repeatable for credit?
No

CIP/Fund Code | S105030014
Default Grade Mode | Letter Grade (G)
Method of instruction
Lecture

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

In Workflow

1. CLDN Department Head GR
2. Curricular Services Review
3. Grad Edu Council Chair
4. DN College Dean GR
5. GC Preparer
6. GC Chair
7. Faculty Senate Preparer
8. Faculty Senate
9. Provost II
10. President
11. Curricular Services
12. Banner

Approval Path

1. 12/13/18 9:11 am
Larry L. Bellinger (larry-l-bellinger): Approved for CLDN Department Head GR
2. 12/17/18 5:02 pm
Terra Bissett (t.bissett): Rollback to Initiator
3. 12/18/18 5:00 pm
Larry L. Bellinger (larry-l-bellinger): Approved for CLDN Department Head GR
4. 12/19/18 2:57 pm
Terra Bissett (t.bissett): Rollback to Initiator
5. 01/08/19 11:22 am
Larry L. Bellinger (larry-l-bellinger): Approved for CLDN Department Head GR
6. 01/09/19 3:05 pm
Terra Bissett (t.bissett): Approved for Curricular Services Review
7. 01/17/19 2:11 pm
Larry L. Bellinger (larry-l-bellinger): Approved for Grad Edu Council Chair
8. 01/17/19 2:19 pm
Larry L. Bellinger (larry-l-bellinger): Approved for DN College Dean GR
9. 01/23/19 10:04 am
LaRhesa Johnson (lrjohnson): Approved for GC Preparer

https://nextcatalog.tamu.edu/courseleaf/approve/?role=Faculty%20Senate#
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? No

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

<table>
<thead>
<tr>
<th>Required (select program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PHD-OBIO) Doctor of Philosophy in Oral Biology</td>
</tr>
<tr>
<td>(MS-OBIO) Master of Science in Oral Biology</td>
</tr>
</tbody>
</table>

**Course Syllabus**

Syllabus: Upload syllabus
Upload syllabus: [OBIO 613 - Interactive Writing and Grant Proposals.pdf](OBIO 613 - Interactive Writing and Grant Proposals.pdf)

Letters of support or other documentation: No

Additional information

Reviewer Comments

Terra Bissett (t.bissett) (12/17/18 5:02 pm): Rollback: Please define what (NIH) is within course description; Semester Credit Hours and Contact Hours must match - please update; please indicate if this course will be a required or an elective course on form.

Terra Bissett (t.bissett) (12/19/18 2:56 pm): Updates received.

Terra Bissett (t.bissett) (12/19/18 2:57 pm): Rollback: Syllabus: Semester credit hours do not match form/syllabus. Please update.

Terra Bissett (t.bissett) (01/09/19 3:05 pm): Updates received.
Course Title: Interactive Writing and Grant Proposals
Course Number: OBIO 613
Term (Semester): Spring
Meeting Times and Locations: 10:00 am to 11:00 am; Room 400A (Blanton Library)
Number of Credit Hours: 1.0

Course Description:
Interactive writing course, produce NIH-formatted grant.

Prerequisites:
All students must be pursuing an MS or PhD in Oral Biology.

Learning Outcomes or Course Objectives:
Students will learn how to write an NIH-formatted grant proposal.

Course Director Information:
Name: Chunlin Qin
Phone: 214 828 8292
Email: cqin@tamhsc.edu
Office Hours: Arranged by appointment
Room Number: 452

Textbook and/or Resource Material:

Grading Policy (Only A, B, C and F grades are allowed for graduate courses. No +/- and no D grades.):
The overall numeric course grade is based on the discussion and review of the student’s progress in the semester. A letter grade will be assigned based on the numerical percentages listed below:

100 – 90: A; 80 – 89: B; 70 – 79: C; Below 70: F
Attendance and Make-Up Policy:

Attendance is mandatory and the Course Director should be notified prior to any anticipated absence. Texas A&M University Student Rules, specifically Rule 7, addresses student absences from class. Those policies (http://student-rules.tamu.edu/rule07) will be followed. If a student is absent due to illness or other unforeseen factors, the student should contact the Course Director on how to make up the lost instruction. If a student misses an exam through an excused absence, then the student should contact the Course Director about taking a make-up exam.

Course Topics, Calendar of Activities, Major Assignments, Test Dates:

The class sessions will consist of lectures from the College of Dentistry faculty and/or presentations from student participants. Students are expected to actively participate in class discussions.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Topics (Including Test Dates and Required Reading)</th>
<th>Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>Introduction to course and instructors – grant writing preparation and grant types</td>
<td>C Qin</td>
</tr>
<tr>
<td>Session 2</td>
<td>Research plan overview (i.e., sections in grants) and specific aims</td>
<td>H Zhao</td>
</tr>
<tr>
<td>Session 3</td>
<td>Review of student’s drafts of specific aims</td>
<td>H Zhao</td>
</tr>
<tr>
<td>Session 4</td>
<td>Introduction to research strategy, significance, and literature review</td>
<td>P Kramer</td>
</tr>
<tr>
<td>Session 5</td>
<td>Review of student’s drafts of significance and literature review</td>
<td>P Kramer</td>
</tr>
<tr>
<td>Session 6</td>
<td>Innovation</td>
<td>J Feng</td>
</tr>
<tr>
<td>Session 7</td>
<td>Introduction to approach, preliminary studies, and scientific premise</td>
<td>K Svoboda</td>
</tr>
<tr>
<td>Session 8</td>
<td>Review of student’s drafts of innovation, preliminary studies, and scientific premise</td>
<td>K Svoboda</td>
</tr>
<tr>
<td>Session 9</td>
<td>Approach section (methods, rigor, biological variables, pitfalls, alternatives)</td>
<td>F Tao</td>
</tr>
<tr>
<td>Session 10</td>
<td>Review of student’s drafts of approach section</td>
<td>F Tao</td>
</tr>
<tr>
<td>Session 11</td>
<td>Overall grant summary</td>
<td>C Qin</td>
</tr>
<tr>
<td>Session 12</td>
<td>Student presentations (Graded: 90-100% = A; 80-89% = B; 70-79% = C; 00-69% = F)</td>
<td>C Qin</td>
</tr>
<tr>
<td>Session 13</td>
<td>Student presentations (Graded: 90-100% = A; 80-89% = B; 70-79% = C; 00-69% = F)</td>
<td>C Qin</td>
</tr>
</tbody>
</table>

Other Pertinent Course Information:

None.

Americans With Disabilities Act (ADA) Policy Statement:

The ADA is a federal antidiscrimination statute that provides comprehensive civil protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Texas A&M College of Dentistry Associate Dean for Academic Affairs, in Room #514, or by telephone at 214-828-8208. For additional information, visit http://disability.tamu.edu.
Academic Integrity Statement:

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

Academic integrity is an educational objective of this institution and students are expected to adhere to all Texas A&M University rules. Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used, or tampering with the academic work of another student.

Upon admission to the Texas A&M College of Dentistry, a student immediately accepts the commitment to uphold the Honor Code. See the following link for additional information.

http://aggiehonor.tamu.edu
Course Change Request

New Course Proposal

Date Submitted: 10/30/18 1:58 pm

Viewing: SCMT 611 : Statistical Foundation of Data Analytics

Last edit: 01/30/19 1:56 pm
Changes proposed by: vslley

Contact(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veronica Stilley</td>
<td><a href="mailto:vstilley@mays.tamu.edu">vstilley@mays.tamu.edu</a></td>
<td>979-862-8055</td>
</tr>
</tbody>
</table>

Course prefix   SCMT  Course number  611
Department   Information & Operations Mgmt
College/School   Mays Business School
Academic Level   Graduate
Effective term   2020-2021

Complete Course Title
Statistical Foundation of Data Analytics

Abbreviated Course Title
STAT FOUNDATION DATA ANALYTICS

Catalog course description
Collection, tabulation and presentation of numerical data; sampling, estimation of averages and variation, probability and error, hypothesis testing, linear and logistic regression; practical applications to functional problems in accounting, finance, marketing and management.

Prerequisites and Restrictions

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 Total 3
Lab: 0 Other: 0
Repeatable for credit?
No

CIP/Fund Code 5213020016
Default Grade Mode Letter Grade (G)
Method of instruction Lecture
Will sections of this course be taught as non-traditional? (i.e.,
No

In Workflow
1. INFO Department Head
2. Curricular Services Review
3. BA Committee Preparer GR
4. BA Committee Chair GR
5. BA 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. 10/29/18 4:46 pm Rich Metters (rmetters): Approved for INFO Department Head
2. 10/30/18 1:24 pm Terra Bissett (t.bissett): Rollback to Initiator
3. 10/30/18 2:05 pm Rich Metters (rmetters): Approved for INFO Department Head
4. 10/30/18 4:37 pm Terra Bissett (t.bissett): Approved for Curricular Services Review
5. 10/31/18 10:04 am Angela Catlin (acatlin): Approved for BA Committee Preparer GR
6. 12/03/18 2:55 pm Michael Shaub (mshaub): Approved for BA Committee Chair GR
7. 12/11/18 4:49 pm Shannon Deer (sknight): Approved for BA College Dean GR
8. 01/03/19 8:36 am LaRhesa Johnson (ljohnson): Approved for GC Preparer
9. 02/07/19 4:20 pm Russell Ramirez (rramirez): Approved for GC Chair

https://nextcatalog.tamu.edu/courseleaf/approve/?role=Faculty%20Senate#
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-FINC) Master of Science in Finance</td>
</tr>
</tbody>
</table>

Required (select program)

<table>
<thead>
<tr>
<th>Program(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(MS-MISY) Master of Science in Management Information Systems</td>
</tr>
</tbody>
</table>

Elective (select program)

Course Syllabus

Syllabus: Upload syllabus

Upload syllabus: SCMT 611 - Statistical Foundation of Data Analytics - Syllabus.pdf
SCMT611.pdf

Letters of support or other documentation: No

Additional information

Reviewer Comments:

Terra Bissett (t.bissett) (10/30/18 1:24 pm): Rollback: Syllabus: title on form/syllabus do not match; update ADA statement should reference White Creek location with included link to Disabilities Services; update link to Aggie Honor Code.

Terra Bissett (t.bissett) (10/30/18 4:37 pm): Updates received.

Mark J. Zoran (mjzoran) (01/03/19 4:15 pm): The Department of Statistics requests that a conversation be had with them prior to a letter of support for this course being submitted by their program.

LaRhesa Johnson (lrjohnson) (01/30/19 1:56 pm): Letter of support added

Key: 18934
January 29, 2019

Dr. Rich Metters  
Head, INFO Department  
Mays Business School  

Re: SCMT 611  

Dear Dr. Metters:

The Department of Statistics has reviewed the proposal for SCMT 611: Statistical Foundations in Data Analytics and is pleased to support INFO Department to offer it for the MS-Finance program. As we discussed, Department of Statistics is free to use the same or similar course name for its own courses.

Sincerely yours,

Jianhua Huang  
Arseven/Mitchell Chair in Astronomical Statistics  
Professor and Acting Head

447 Blocker Building  
3143 TAMU  
College Station, TX 77843-3143  
Tel. 979.845.3141  Fax. 979.845.3144  
jianhua@stat.tamu.edu  
www.stat.tamu.edu/~jianhua
Statistical Foundation of Data Analytics
SCMT 611-601
Fall 2019

Dr. Antonio (Tony) Arreola–Risa
301E Wehner Building, Tel. 845–1092, Email: tarreola@tamu.edu
Office hours: TBD

Class time and room: TBD.

Course Description: Collection, tabulation and presentation of numerical data; sampling, estimation of averages and variation, probability and error, hypothesis testing, linear and logistic regression. Practical applications to functional problems in accounting, finance, marketing and management.

Class prerequisites: None

Class objective: To introduce students to the statistical foundation of business analytics.

Learning outcomes: Upon completion of this class, the student will be able to
01. Analyze business problems and appropriately apply statistical analyses.
02. Transform data into useful information for decision makers using descriptive statistics.
03. Develop forecasting techniques to evaluate feasible alternatives using inferential statistics.
04. Quantify risk and reduce variation in decision-making processes.
05. Conduct hypothesis tests based on one or two samples.
06. Perform and interpret simple regression, multiple regression, and logistic regression.
07. Use a spreadsheet to assist in statistical analysis.
08. Use quantitative methods to solve business problems involving uncertainty.

Required material:
Statistical Foundation of Business Analytics Lecture Notes by Tony Arreola–Risa. Available at MSC Barnes & Noble Bookstore and Textbook Solutions. The student must bring the lecture notes to class; when lecturing I will assume this is the case.

Optional material:

Performance evaluation: Two in-class exams and a third exam given during the final examinations period. Exams are not cumulative and will have a duration of 75 minutes. Each exam is worth 100 points. Thus the maximum number of points in the class is 300. A total score of: 270–300 points will receive an A; 240–269 points will receive a B; 210–239 points will receive a C; 180–209 points will receive a D; 179 points or lower will receive an F. This is the ONLY performance evaluation system that will be used.

Class topics:
1. Review of basic statistical definitions and concepts.
2. Hypothesis Testing with Categorical Data.
3. Multiple Linear Regression: Predicting One Factor from Several Others.
4. Multiple Linear Regression: Model Building.
5. Logistic Regression.
Information about exams:

1) Exam material will come from the lecture notes and class lectures. As preparation for exams, the student will answer the sample exam questions to be provided by the instructor on eCampus.

2) Exams will contain multiple-choice questions. A scantron form 886 of size 8.5 by 11 inches will be needed for each exam. You will be required to furnish your own scantron form.

3) Exams will be with closed book and notes (tables will be provided as needed); however, the student will be allowed to use pages 1 to 4 of the scantron form 886 as a “summary card.” Information in the summary card must be HAND written. Copies and reductions are not allowed. Any violation of these rules will be considered cheating.

4) Schedule of exams (date and time): Exam 1 (October 4, class time); Exam 2 (November 1, class time); Exam 3 (December 7, 3–4:15pm).

5) Exams may not be missed or rescheduled for the convenience of the student. You know by now the dates of the four exams and it is expected that you will schedule your other activities around these dates. If an exam is missed for a reason considered excused by Texas A&M University (see the latest issue of Texas A&M University Student Rules), the student must notify the instructor by the end of the next working day after the absence in order to ensure full rights (you may email me or call my office and leave a message). Upon submitting written proof to the instructor that the absence is considered excused by Texas A&M University, the student will be allowed to take a make-up exam. Otherwise, the student will receive a grade of zero in the missed exam. The student should keep in mind that when the absence is due to illness too severe or contagious for the student to attend class, the examining doctor must state so in the excuse documentation.

6) Schedule of make-up exams and quizzes: Exam 1 (October 11); Exam 2 (November 8); Exam 3 (December 13). Make-ups of Exams 1 to 2 will start at 12:45pm; the make-up of Exam 3 will start at 1pm. Meet me in my office 5 minutes prior to the start of the make-up exam.

7) The instructor will assign to students a class roster number which will be used during the semester for all grading purposes (hence make sure that you remember your roster number at all times).

Make-up policy. If a student will miss an exam because of a planned university-excused absence per Student Rule 7.1, he or she may take the exam in advance. To be excused, the student must notify the instructor in writing (acknowledged e-mail message is acceptable) two weeks prior to the date of absence and provide appropriate documentation for the absence. The fact that these are university-excused absences does not relieve the student of responsibility for prior notification and documentation. Failure to notify or to document properly may result in an unexcused absence and no right to make up a missed test. The reasons absences are considered excused by the university are listed in Student Rule 7 (http://student-rules.tamu.edu/rule07).

For an unplanned absence (e.g., documented illness, accident, or death in family), the student will be allowed to make-up the exam or quiz within 21 calendar days (7 calendar days for quizzes) from the last day of the absence. In such cases for which advance notification is not feasible, the student must provide notification by the end of the second working day after the absence, including an explanation of why notice could not be sent prior to the class. Written documentation of the cause for missing the exam is also required. To make-up an exam missed for health reasons requires a note signed by a physician that confirms your illness and inability to attend class on the day of the exam. The “Explanatory Statement for Absence from Class” form that is available from the A&M website is not acceptable.

Falsification of documentation is a violation of the Texas A&M University Honor Code.
Students with disabilities. 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.


Note. We have beautiful and state-of-the-art classrooms in the Wehner Building. We want to maintain the high quality conditions of these classrooms for the students in future years. Thus, it is necessary for you to adhere to the established policy of NO BEVERAGES, FOOD, TOBACCO PRODUCTS, OR ANIMALS (unless approved) within the Wehner Building classrooms. Students found violating this policy will be asked to leave the classroom.

Instructor’s brief bio. Tony Arreola–Risa is an Associate Professor in the Information & Operations Management Department, Mays Business School, Texas A&M University. He received his B.S. in industrial and systems engineering from Monterrey Institute of Technology (ITESM) in Mexico, his M.S. in industrial engineering from Georgia Institute of Technology, and his M.S. and Ph.D. in operations management from Stanford University.

Prior to joining Texas A&M, Dr. Arreola–Risa worked as a production and inventory control analyst at a manufacturing firm, and later taught at ITESM and at the University of Washington in Seattle. His primary research, teaching and consulting interests are manufacturing and inventory systems with emphasis in supply-chain management and ERP, as well as service operations with emphasis on healthcare delivery. He has taught undergraduate, masters, and doctoral classes. He has also lectured in executive education programs and consulted for numerous companies in the U.S. and abroad. Dr. Arreola–Risa is on the CHI St. Joseph Health Board of Directors.

Class sessions plan:

01. Syllabus and class introduction.
02. Review of basic statistical definitions and concepts.
03. Review of basic statistical definitions and concepts.
04. Review of basic statistical definitions and concepts.
05. Guest speaker or video 1.
06. Review of basic statistical definitions and concepts.
07. Hypothesis Testing with Categorical Data.
08. Hypothesis Testing with Categorical Data.
09. Hypothesis Testing with Categorical Data.
10. Hypothesis Testing with Categorical Data.
11. Hypothesis Testing with Categorical Data.
13. Multiple Linear Regression: Predicting One Factor from Several Others.
14. MLR: Predicting One Factor from Several Others. (Exam 1 make up)
15. Multiple Linear Regression: Predicting One Factor from Several Others.
16. Multiple Linear Regression: Predicting One Factor from Several Others.
17. Multiple Linear Regression: Predicting One Factor from Several Others.
18. Multiple Linear Regression: Predicting One Factor from Several Others.
19. Multiple Linear Regression: Predicting One Factor from Several Others.
21. Guest speaker or video 2.
22. Multiple Linear Regression: Model Building. (Exam 2 make up)
23. Multiple Linear Regression: Model Building.
24. Multiple Linear Regression: Model Building.
25. Multiple Linear Regression: Model Building.
26. Multiple Linear Regression: Model Building.
27. Logistic Regression.
29. Final Examination