<table>
<thead>
<tr>
<th>DEPT</th>
<th>NUM</th>
<th>TITLE</th>
<th>TYPE</th>
<th>DATE</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>APY</td>
<td>345</td>
<td>Blood &amp; Chocolate: Ancient Civilizations of M</td>
<td>MDT</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CHM</td>
<td>201 201</td>
<td>Organic Chemistry I</td>
<td>MP</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-317</td>
<td>Data structures and Algorithm Analysis</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-419</td>
<td>Programming Languages</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-423</td>
<td>Database Systems</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-424</td>
<td>Computer Networks</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-427</td>
<td>Theory of Computing</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>000-431</td>
<td>Introduction to Software Engineering</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>REL</td>
<td>408-408</td>
<td>Special Projects in Religious or Historical T</td>
<td>MG</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>REL</td>
<td>409-409</td>
<td>Special Projects in Religious Issues or Probl</td>
<td>MG</td>
<td>1/31/2014</td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>000-321</td>
<td>Applied Health Policy</td>
<td>A</td>
<td>1/31/2014</td>
<td></td>
</tr>
</tbody>
</table>
Course and Curriculum
Course Change Form

Course as It appears in the Bulletin:

School/College: AS - College of Arts and Sciences  Dept: Anthropology  Course: 345
Is this an experimental course? O N Y  Effective Date: 01/22/14  # of Credits: 3
Full Title: Ancient Civilizations of Mesoamerica
Abbreviated Title:______________________________________________________

Course as you wish it to appear in subsequent Bulletin(s) – only fill in changing information:

Full Title: Blood and Chocolate: Ancient Civilizations of Mesoamerica
Abbreviated Title:______________________________________________________
Is taken for Credit Only: O N Y  Full Time Indicator*: O N Y  Alt Title: O N Y
Frequency: offered by arrangement  # of Credits: 3
Prerequisites: None
Co-requisites: None
Identifiers: (WRITE, HONR, INTR, INTR2, INTR3, INTR4, etc.)
Course Description: An archaeological approach to understanding the major pre-Columbian cultures of Mesoamerica, from Olmec to Aztec periods, with emphasis on the ancient Maya.

Dept Contact: Melody Peciar  Email address: mpeciar@miami.edu  Phone: 305-284-3535
Department Chair Signature: __________________________  Date: 01/22/14
Academic Dean/Director Signature: __________________________  Date: __________
Dean of the Graduate School: __________________________  Date: __________
Curriculum Committee Chair: __________________________  Date: __________

*Justification for course being worthy of full time status must also be submitted.
# Course and Curriculum

## Course Change Request

**Year:** 2014  
**Semester:** Fall  
**School/College:** A&S - College of Arts and Sciences

**Course:** 345  
e.g. (ACC 301)

### Full-time status rationale
This is only required for courses flagged as being equivalent to full-time status.  
Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).

<table>
<thead>
<tr>
<th>Course Requirements:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>School Code:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level Code:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class Code:</td>
<td></td>
<td></td>
<td>OR; Secondary Class</td>
</tr>
<tr>
<td>Minimum GPA:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifier (1):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifier (2):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permission Required:</td>
<td>No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
## Course and Curriculum
### Course Addition Form

**School/College:** AS - College of Arts and Sciences  
**Dept:** BMB  
**Course:** BMB 402  

Is this an experimental course? **N** Y  
**Effective Date:** 08/15/14  
**# of Credits:** 2  

Is taken for Credit Only: **Y** N Y  
**Full Time Indicator:** **Y** N Y  
**Alt Title:** **Y** N Y  

**Frequency:** 05 - Fall & Spring  

**Abbreviated Title:** Experimental BMB  

**Full Title:** Principles of Experimental Biochemistry & Molecular Biology  

**Prerequisites:** Either CHM 202, CHM 221, or BMB 401  

**Co-requisite(s):** BMB 401  

**Identifiers:**  

**Course Description:**  
The goal for this course is to make students "research-ready" through an active, inquiry-based, platform for developing core competencies in biochemistry & molecular biology.  

**Dept Contact:** Dr. Thomas K Harris  
**Email address:** tkharris@miami.edu  
**Phone:** 305-243-3358  

**Department Chair Signature:**  
**Date:** 08/15/14  

**Academic Dean/Director Signature:**  
**Date:**  

**Dean of the Graduate School:**  
**Date:**  

**Curriculum Committee Chair:**  
**Date:**  

---

*Justification for course being worthy of full time status must also be submitted (see second page).*
Course and Curriculum
Course Addition Request

Please fill in all of the below information:

Year: 2014  Semester: Fall  School/College: AS - College of Arts and Sciences
Course: BMB 402  0, 8 (ACC 701)

Full-time status rationale: This is only required for courses flagged as being equivalent to full-time status. Rationale must include why the course is equivalent to full-time credit (15 credits for undergraduate; 9 credits for graduate).

Course Requirements:

|-------------|----------------|------------|------------|

School Code:  AS - College of Arts and Sciences
Level Code:   U - UNDERGRADUATE
Class Code:
Minimum GPA: ___
Identifier (1): _______
Identifier (2): _______
Permission Required: No

Co-Requisite Course (1): ___  Section: ___  Type: ___
Co-Requisite Course (2): ___  Section: ___  Type: ___
Co-Requisite Course (3): ___  Section: ___  Type: ___
Co-Requisite Course (4): ___  Section: ___  Type: ___
Co-Requisite Course (5): ___  Section: ___  Type: ___
BMB400
Principals of Experimental Biochemistry and Molecular Biology

Basic Course Information

Instructor: Dr. Flavia Fontanesi
Department of Biochemistry and Molecular Biology
Office: UM Medical Campus 1600 NW 10th Avenue RMSB room #2067B
Phone: 305-2438683
E-mail: ffontanesi@med.miami.edu
Office hours: Monday 5.00 pm – 7.00 pm (or by appointment)

Class meeting time and location: Spring semester 2014.
Wednesday and Friday 9.00 am – 11.50 am
Sections BCD 2,3
Cox Science Building room #304

Credits: 2

Prerequisite: BMB260. Co-requisite: BMB401

Course Overview

The course provides students with a hands-on laboratory experience that introduces them to several standard biochemical and molecular biology techniques, such as spectrophotometry, protein purification, electrophoretic analysis, PCR, site-directed mutagenesis, etc. Emphasis is placed on the analytic and quantitative aspects of experimental biochemistry, both at the experimental design and data collection and analysis levels. Moreover, the course is aimed at promoting the interest of the students in pursuing a training experience in a biochemical/biomedical research laboratory and at developing the basic skills and proper laboratory habits instrumental for such experience.

Course Learning Outcomes

By the end of the course you should be able to:
- Maintain a useful and appropriate laboratory notebook.
- Organize your lab bench space, material and work efficiently.
- Prepare common solutions, buffers and reagents used in a biochemistry lab.
- Be familiar with the principles of some basic techniques of experimental biochemistry and molecular biology such as chromatography, spectrophotometry, electrophoresis and PCR methods.
- Be able to follow several common laboratory protocols autonomously.
- Present your results in a clear, logic and critical manner.
Course Format

This is a lecture-lab course in which topics are presented by the instructor and experiments are conducted by the students in groups of 2-4 people during lab hours. However, laboratory notebooks and reports will be evaluated for each student individually.

Assessments and Evaluation

Your performance will be assessed through multiple activities, including classroom and homework. You will receive regular feedback on your work to help you monitor and improve your performance.

Your final grade will be based on the following:
- Attendance and participation 25%
- Laboratory Notebook 25%
- Midterm Test 25%
- Final Laboratory Report 25%

Attendance is expected at all the classes and more than two absences will affect your final grade.

You will be asked to keep a laboratory notebook, which will be reviewed biweekly by the instructor to provide you with feedbacks. You will receive a grade for your notebook at the midterm and at the end of the course.

Tentative Course Schedule

Note: changes in the schedule may occur throughout the semester. You will be promptly informed of any changes.

(Wednesday January 15 and Friday January 17, Preparation of materials and TA training, No classes.)

Wednesday January 22, Introduction to the course, lab safety, lab notebook, lab rudiments. Use of automatic pipettors.

Friday January 24, Experiment 1, Preparation of buffers.

Wednesday January 28, Experiment 2 Part 1, Spectrophotometry: absorbance spectra, pKₐ and extinction coefficient of p-nitrophenol.

Friday January 31, Experiment 2 Part 2, Spectrophotometry: absorbance spectra, pKₐ and extinction coefficient of p-nitrophenol.
**Wednesday February 5.** Protein purification. Experiment 3, Gel filtration chromatography.

**Friday February 7.** Experiment 4 Part 1, β-galactosidase purification by affinity chromatography.

**Wednesday February 12.** Experiment 4 Part 2, SDS-PAGE and Native-PAGE. Coomassie blue staining.

**Friday February 14.** Experiment 4 Part 3, Protein quantification.

**Wednesday February 19.** Measurements of enzymatic activity. Experiment 4 Part 4, β-galactosidase enzymatic specific activity.

**Friday February 21.** Experiment 4 Part 5, β-galactosidase enzymatic activity, $K_m$, $V_{max}$ and effect of inhibitors.

**Wednesday February 26.** Experiment 4 Part 6, β-galactosidase enzymatic activity, effect of pH and temperature.

**Friday February 28.** Use of enzymatic reactions to determine substrate concentrations. Relevance in clinical biochemistry. Experiment 5, Determination of glucose concentration.

**Wednesday March 5.** Metabolism, ATP synthesis, ATP hydrolysis. Experiment 6, Measurements of ATP hydrolysis.

**Friday March 7.** Midterm Test.

Spring break

**Wednesday March 19.** PCR technology and its application to identify point mutations in genes. Experiment 7 Part 1, PCR reactions.

**Friday March 21.** Experiment 7 Part 2, PCR product analysis.

**Wednesday March 26.** Use of model organisms to analyze the effect of human disease-associated mutations. Experiment 8 Part 1, Bioinformatics analysis and primers design.

**Friday March 28.** Experiment 8 Part 2, Mutagenesis PCR and reagents preparation.

**Wednesday April 2.** Experiment 8 Part 3, DpnI digestion and E. coli transformation.

**Friday April 4.** Experiment 8 Part 4, Plasmid extraction from E. coli (Minipreps).

**Wednesday April 9.** Experiment 8 Part 5, Miniprep analysis and quantification.

**Friday April 11.** Semi-quantitative analysis of enzymatic activity. Experiment 9 Part 1, Yeast transformation.
**Wednesday April 16**, Experiment 9 Part 2, Analysis of transformation efficiency.

**Friday April 18**, Experiment 9 Part 3, Preparation of cell extracts.

**Wednesday April 23**, Experiment 9 Part 4, Electrophoresis and SOD1 in gel activity.

**Friday April 25**, Revision. Final laboratory report due.
## Course and Curriculum
### Course Change Form

**Course as it appears in the Bulletin:**

<table>
<thead>
<tr>
<th>School/College:</th>
<th>AS - College of Arts and Sciences</th>
<th>Dept:</th>
<th>Chemistry</th>
<th>Course: CHM 201</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this an experimental course?</td>
<td>☐ N ☑ Y</td>
<td>Effective Date:</td>
<td>05/01/14</td>
<td># of Credits:</td>
</tr>
</tbody>
</table>

**Full Title:** Organic Chemistry I

**Abbreviated Title:**

**Course as you wish it to appear in subsequent Bulletin(s) – only fill in changing information:**

<table>
<thead>
<tr>
<th>Full Title:</th>
<th></th>
</tr>
</thead>
</table>

**Abbreviated Title:**

**Is taken for Credit Only:** ☑ N ☑ Y

**Frequency:**

**Prerequisites:** CHM 112 or CHM 221

**Co-requisite(s):**

**Identifiers:**

**Course Description:**

**Dept Contact:** Marc R. Knecht

**Email address:** knecht@miami.edu

**Phone:** 80361

**Department Chair Signature:**

**Date:** Jan 24 '14

**Academic Dean/Director Signature:**

**Date:**

**Dean of the Graduate School:**

**Date:**

**Curriculum Committee Chair:**

**Date:**

*Justification for course being worthy of full time status must also be submitted.*
## Course and Curriculum

### Course Change Request

Only fill in changing information:

<table>
<thead>
<tr>
<th>Year:</th>
<th>Semester:</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
</table>

Course: CHM 201

Full-time status rationale This is only required for courses flagged as being equivalent to full-time status. Rationale must include why the course is equivalent to full-time status (12+ credits for undergraduate; 18 credits for graduate).

### Course Requirements:

|-------------|------------|------------|------------|

<table>
<thead>
<tr>
<th>School Code:</th>
<th>Level Code:</th>
<th>Class Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OR; Secondary Class</td>
</tr>
</tbody>
</table>

Minimum CPA: ___

Identifier (1): ______

Identifier (2): ______

Permission Required: No

Co-Requisite Course (1): ______

Co-Requisite Course (2): ______

Co-Requisite Course (3): ______

Co-Requisite Course (4): ______

Co-Requisite Course (5): ______

Section: ______

Type: ______

Section: ______

Type: ______

Section: ______

Type: ______

Section: ______

Type: ______

Section: ______

Type: ______

Section: ______

Type: ______
# Course and Curriculum
## Course Addition Form

**Course as you wish it to appear in the Bulletin:**

| School/College: | AS - College of Arts and Sciences | Dept: | CSC | Course: | CSC317 |
| Is this an experimental course? | ☐ N ☑ Y | Effective Date: | Now | # of Credits: | 3 |
| Is taken for Credit Only: | ☐ N ☑ Y | Full Time Indicator*: | ☐ N ☐ Y | Alt Title: | ☐ N ☑ Y |

**Frequency:** 05 - Fall & Spring

**Abbreviated Title:** DATA STR ALGRM ANL

**Full Title:** Data Structures and Algorithm Analysis

**Prerequisites:** CSC220, MTH309

**Co-requisite(s):**

**Identifiers:** (WRITE, HONER, INTR1, INTR2, INTR3, INTR4, etc.)

**Course Description:** Basic algorithmic analysis. Algorithmic strategies. Fundamental computing algorithms. Distributed algorithms. Cryptographic algorithms. Geometric algorithms.

**Dept Contact:** Geoff Sutcliffe  
Email address: geoff@cs.miami  
Phone: x2158

**Department Chair Signature:** [Signature]  
Date: 1/14/2014

**Academic Dean/Director Signature:**  
Date: 

**Dean of the Graduate School:** required for graduate courses only  
Date: 

**Curriculum Committee Chair:**  
Date: 

*Justification for course being worthy of full time status must also be submitted (see second page).*
# Course and Curriculum

## Course Addition Request

Phone: (305) 284-4846  
Fax: (305)284-5293  
Email: scheduling.rg@miami.edu

Please fill in all of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course: GSC317</td>
<td></td>
<td>e.g.(ACC 101)</td>
</tr>
</tbody>
</table>

### Full-time status rationale
This is only required for courses flagged as being equivalent to full-time status.  
*Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).*

## Course Requirements:

|--------------------|------------|------------|------------|

<table>
<thead>
<tr>
<th>School Code:</th>
<th>Level Code:</th>
<th>Class Code:</th>
<th>Minimum GPA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifier (1):</td>
<td>Identifier (2):</td>
<td>OR; Secondary Class Code:</td>
<td></td>
</tr>
</tbody>
</table>

Permission Required:

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
CSC517-H: Algorithms

Prof. B. Rosenberg
Fall Semester, 2014 (141)
MW 3:35-4:50 PM
Memorial 312

Email: burt at cs miami edu

The MIT Tinker-toy computer

LATEST  Final on Monday, Dec 16, 2:00 to 4:30.

News Syllabus  Notes  Problem Sets  Practicum
Etcetera

This is a course on algorithmic thinking. You will learn how to think about problems from the point of view of machine procedures to solve the problem. You will be given techniques to break a problem down, to notice it's combinatorial difficulties, to reason about correctness, and to measure the efficiency of a solution. You will learn how to recognized the inherent complexity of a problem – the best possible efficiency that a problem can be solved.

The course does not require programing. The course is more about thinking about code, than writing code. However, the Practicum does Javascript programming and dynamic HTML to create creative animations of the algorithms presented in the course. The Practicum is self-study, and highly recommended. In the practicum you will learn the basis of in-browser programming, and exercise your coding skills for algorithms.

General
• The textbook is *Introduction to Algorithms* (3rd edition), Cormen, Leiserson, Rivest and Stein.
• Please follow us on twitter/csc_517.
• The course assigns weekly problem sets, due on Wednesdays. It is very important to do the homeworks. Please direct questions on grading first to the grader Joe Masterjohn.
• Our grader is Joe Masterjohn, j.masterjohn@umiami.edu; office Ungar 406, 9am – 11am Wednesdays.
• No late homeworks accepted after the last day of classes, Tuesday, Dec 10.
• Midterm Wednesday October 23.
• The final will be in class at 2:00 – 4:30 pm on Wed Dec 16.
• Grades are 40% final, 30% midterm, and 30% homework.

**Practicum**

The mainline of the course will have no programming. The optional practicum will assign you the task of implementing some of the algorithms using Javascript, CSS, and DHTML. If you would like to take the practicum, enroll in CSC 403.

**Writing Credit**

Three essays, each at least 1500 words.

• The need to break military codes drove forward the construction of computers during World War II. Among the early computers were the Colossus designed by Tommy Flowers, to break German Navy codes (Tunny) and Turing’s Bomb, to break army and high command codes (Enigma). These were really the first computers ever built. there were code breaking computers.
• A science fiction short story about algorithms, computers, etc. If not original, you can do an analysis of some Sci-Fi books like The Diamond Age, or Snow Crash.

Please write me with your proposed topics, if you elect writing credit. One paper must be done before the midterm, and the other two before reading days.
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

<table>
<thead>
<tr>
<th>School/College: AS - College of Arts and Sciences</th>
<th>Dept: CSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this an experimental course? ○ N ○ Y</td>
<td>Effective Date: Now</td>
</tr>
<tr>
<td>Is taken for Credit Only: ○ N ○ Y</td>
<td>Full Time Indicator*: ○ N ○ Y</td>
</tr>
<tr>
<td>Frequency: 30 - By Announcement</td>
<td># of Credits: 3</td>
</tr>
<tr>
<td>Abbreviated Title: PROG LANG</td>
<td>e.g. (ACC 101)</td>
</tr>
<tr>
<td>Full Title: Programming Languages</td>
<td>e.g. (2 or 3)</td>
</tr>
<tr>
<td>Prerequisites: CSC317</td>
<td>Alt Title: ○ N ○ Y</td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td></td>
</tr>
<tr>
<td>Identifiers: (WRITE, HONORS, INTR1, INTR2, INTR3, INTR4, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

| Dept Contact: Geoff Sutcliffe Email address: geoff@cs.miami Phone: x2158 |
|--------------------------------------------------|---------------|
| Department Chair Signature: | Date: 1-14-2019 |
| Academic Dean/Director Signature: | Date: |
| Dean of the Graduate School: required for graduate courses only | Date: |
| Curriculum Committee Chair: | Date: |

*Justification for course being worthy of full time status must also be submitted (see second page).
Course and Curriculum
Course Addition Request

Please fill in all of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course: CSC419</td>
<td>e.g. (ACC 111)</td>
<td></td>
</tr>
</tbody>
</table>

**Full-time status rationale** This is only required for courses flagged as being equivalent to full-time status.

*Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduates; 9+ credits for graduates).*

---

**Course Requirements:**

|--------------|------------|------------|------------|

<table>
<thead>
<tr>
<th>School Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Code:</td>
</tr>
<tr>
<td>Class Code:</td>
</tr>
<tr>
<td>Minimum GPA:</td>
</tr>
<tr>
<td>Identifier (1):</td>
</tr>
<tr>
<td>Identifier (2):</td>
</tr>
</tbody>
</table>

**OR; Secondary Class Code:**

| Permission Required: |

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
Last modified on 04/23/2013

CSC 519 R: Programming Languages

Final exam

Here is the schedule for the final exam. Each discussion will be 10min followed by a small feedback. Location will be my office, Ungar Bldg, room 441.

<table>
<thead>
<tr>
<th>No.</th>
<th>May 3, 2013</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9:00-9:15</td>
<td>Nico</td>
</tr>
<tr>
<td>2</td>
<td>9:15-9:30</td>
<td>Adam</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>May 6, 2013</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>9:30-9:45</td>
<td>Brian</td>
</tr>
<tr>
<td></td>
<td>10:15-10:30</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>May 7, 2013</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>2:00-2:15</td>
<td>Muriel</td>
</tr>
<tr>
<td>18</td>
<td>2:15-2:30</td>
<td>Justine</td>
</tr>
<tr>
<td>19</td>
<td>2:30-2:45</td>
<td>Lauren</td>
</tr>
<tr>
<td>20</td>
<td>2:45-3:00</td>
<td>Rich</td>
</tr>
<tr>
<td>21</td>
<td>3:00-3:15</td>
<td>Kyle K</td>
</tr>
<tr>
<td>22</td>
<td>3:15-3:30</td>
<td>Matt D</td>
</tr>
<tr>
<td>23</td>
<td>3:30-3:45</td>
<td>Paul</td>
</tr>
<tr>
<td>24</td>
<td>3:45-4:00</td>
<td>Ana-Maria</td>
</tr>
<tr>
<td>25</td>
<td>4:00-4:15</td>
<td>Ghada</td>
</tr>
<tr>
<td>26</td>
<td>4:15-4:30</td>
<td>Ana</td>
</tr>
<tr>
<td>27</td>
<td>4:30-4:45</td>
<td>Jack</td>
</tr>
<tr>
<td>28</td>
<td>4:45-5:00</td>
<td>Chris</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>May 8, 2013</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9:00-9:15</td>
<td>Brian</td>
</tr>
<tr>
<td>2</td>
<td>9:15-9:30</td>
<td>Adam</td>
</tr>
</tbody>
</table>
Slides

1. Introduction: pl-ch1.pdf
2. Evolution of major programming languages: pl-ch2.pdf
4. Names, Bindings, Type Checking, and Scopes: pl-ch5.pdf
8. Functional Programming Languages: pl-ch15.pdf, download MIT-Scheme, John Backus paper

Assignments:
Assignment 1, Assignment 2, Assignment 3, Assignment 4, Assignment 5, Assignment 6, Assignment 7

How to upload assignments:
You submit solutions (text, sources and binaries) to your assignments by uploading them into your account. You will find a directory 'assignment<n>' for each assignment in your home directory. Please use only this particular folder for submission. If you have any problems with the process of submission, contact Faisal before due date, otherwise it may be treated as a late submission.

Instructions for uploading:
Linux/Unix: You should be familiar with using scp. If not, use man scp within a terminal window and follow the explanation. As an example: assume you have your program and the sources in a local directory 'assignment1' and you cd into one level above this directory, type:

scp -r assignment1/* <username>@lee.cs.miami.edu:assignment1

to upload it.

Windows: WinSCP (http://winscp.net/eng/download.php) is a compact graphical scp-client. Otherwise, you can also use PuTTY (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html) and then the Linux scp version as described before.

Mac: Two options: 1) open Terminal and follow instructions under Linux/Unix. 2) Use Cyberduck (http://cyberduck.ch) as a GUI client.
Introduction
Concepts of Programming Languages introduces students to the main constructs of contemporary programming languages and provides the tools necessary to critically evaluate existing and future programming languages. By presenting design issues for various language constructs, examining the design choices for these constructs in some of the most common languages, and critically comparing the design alternatives, this course gives students a solid foundation for understanding the fundamental concepts of programming languages.

Course objectives
1. To learn the key concepts of the design of contemporary programming languages.
2. To learn to intelligently evaluate the features of contemporary programming languages, as well as to evaluate complete languages.
3. To learn a significant part of one particular language.

Instructor
Dr. Ubbo Visser. Contact details are on the WWW at http://www.cs.miami.edu/~visser. The WWW page gives also digital copies of assignments and slides (if not already on the WWW as HTML version). Particular office hours are not given, students who want to talk to me are encouraged to make an appointment with me in class or via email. Students are encouraged to ask questions by email at all times.

Teaching Assistant
Faisal Sikder
Email: f.sikder@umiami.edu
Lab hours: Wed: 10am-1pm; Sat: 11am-1pm

Contact Hours
Each week there are two 75 minutes sessions (Tuesday, Thursday 2pm - 3.15pm)
Classroom: MM 215

Recommended Text Book

Course Content
Chapters 1 to 3, 5 to 12, plus parts of 13, 14, 15, and 16 as time permits. If time is short, some of the concepts in chapters 13-14 will be omitted. Also, you will learn part of some language that is new to most of the students in the class. Course material will be uploaded before the lecture as .pdf files. The content may be subject to small changes during the semester.

Grading (will be based on a total of 100 points)
Homework: 70 points
Final: 30 points
Scoring of Homework Assignments
The score of each homework will be mentioned in it. The total score of all homework assignments will be scaled down to 70 points at the end of the semester for the purpose of final grading. For example, if all homework assignments collectively carry 100 points and a student gets 90 out of 100, he/she gets 90*70/100 or 63 out of 70 in Homework Assignment component for final grading.

Class attendance and participation
Class attendance is not mandatory, although my exams will depend heavily on my lectures. Not all of the material will come from the text. Class participation is also important. Active interest in lectures is the easiest way to learn.

Plagiarism
The penalty for copied homework of any kind can be immediate failure in the course. My policy on programs is as follows: There is no reason for two (or more) people handing in identical or nearly identical programs. I will regard such programs as either group-written or simply copied. If I have no hard evidence of copying, such programs will receive NO credit. More serious actions will be taken in cases where there is evidence of cheating.

Late programs
Unless otherwise stated, programs will lose 20% of their value for each weekday (Monday through Friday) that they are late, down to a minimum value of 20%. The due date of a program is the latest date on which it can be run to get full credit.

Dropping the course
Unless there are extreme extenuating circumstances, I will not allow anyone to drop a course after the drop date. Poor academic performance will never be an acceptable reason for a late drop. The drop date for this course is March 29th.

Incompletes
Unless there has been a documentable illness that caused you to miss substantial amounts of class and computer time, I will not give an incomplete grade in this course. Therefore, please do NOT waste my time asking about an incomplete grade unless you have a remarkably good reason.

Make-up exams
I do not give make-up exams. You simply must show up and take them at the specified times.
Course and Curriculum
Course Addition Form

School/College: AS - College of Arts and Sciences
Dept: CSC
Course: CSC421
Is this an experimental course? ☐ N ☑ Y
Effective Date: Now
# of Credits: 3
(Example: 3 or 0)
Is taken for Credit Only: ☐ N ☑ Y
Full Time Indicator*: ☐ N ☑ Y
Alt Title: ☐ N ☑ Y
Frequency: 05 - Fall & Spring

Abbreviated Title: COMP OP SYS

Full Title: Principles of Computer Operating Systems

Prerequisites: CSC314, CSC322

Co-requisite(s):

Identifiers:

(WRITE, HORER, INTR1, INTR2, INTR3, INTR4, etc.)


Dept Contact: Geo'f Sutcliffe
Email address: geoff@cs.miami
Phone: x2158

Department Chair Signature: [Signature]
Date: 1-14-2014

Academic Dean/Director Signature: [Signature]
Date: ______

Dean of the Graduate School: [Signature]
Date: ______

Curriculum Committee Chair: [Signature]
Date: ______

*Justification for course being worthy of full time status must also be submitted (see second page).
Please fill in all of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course:</td>
<td></td>
<td>CSC421 e.g. [ACC 111]</td>
</tr>
</tbody>
</table>

**Full-time status rationale** This is only required for courses flagged as being equivalent to full-time status.

Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate)

<table>
<thead>
<tr>
<th>Course Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major/Minor: QY ON</td>
</tr>
<tr>
<td>Major (1): _____</td>
</tr>
<tr>
<td>Major (2): _____</td>
</tr>
<tr>
<td>Major (3): _____</td>
</tr>
<tr>
<td>Minor (1): _____</td>
</tr>
<tr>
<td>Minor (2): _____</td>
</tr>
<tr>
<td>Minor (3): _____</td>
</tr>
</tbody>
</table>

School Code: 
Level Code: 
Class Code: 
OR; Secondary Class Code: 
Minimum GPA:  
Identifier (1): ________
Identifier (2): ________
Permission Required:

<table>
<thead>
<tr>
<th>Co-Requisite Course (1): _____</th>
<th>Section: ___</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2): _____</td>
<td>Section: ___</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3): _____</td>
<td>Section: ___</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4): _____</td>
<td>Section: ___</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5): _____</td>
<td>Section: ___</td>
<td>Type:</td>
</tr>
</tbody>
</table>
CSC521-E: Operating Systems

Prof. B. Rosenberg  
Fall Semester, 2014 (141)  
MWF 12:20–1:10 PM  
Whitten Learning Center 160

Email: burt at cs miami edu

LATEST  All work done Monday Dec 16

News  Syllabus  Textbook  Notes  Quizzes  Projects  Links

This is a course in computer operating systems. The goals of the course are to present the most common mechanisms used by operating systems to implement useful behavior, and to understand the trade-offs between mechanisms in the context of available technologies and human demands. In addition, the student will gain experience working with "real code", that is, the code of the Linux operating system kernel, as well as developer tools for working with code in a collaborative environment.

- Reading
  - Required reading:
    - *Linux Kernel Development (3rd Edition)*, by Love
    - *C: A reference manual*, by Harbison and Steele
    - *Lions' Commentary on Unix* by John Lions
    - *The Little Book on Semaphores* by Allen Downey
    - *Operating Systems: the tiny textbook*, Burton Rosenberg,
  - Recommended reading:
    - *The Design and Implementation of the FreeBSD Operating System*, by McKusick and Neville-Neil
    - *Windows Internals*, by Russinovich, Solomon and Ionescu
    - *Mac OS X Internals: A Systems Approach* by Amit Singh
  - Suggested reading:
    - *How to be become a hacker*, by Eric Raymond.
    - *Operating System Concepts*, Abraham and Silberschatz
    - *The Design of the Unix Operating System* by Maurice Bach
- Work:
  - Quizzes: Generally one per week. Out on Monday after class, due the
next Wednesday by the end of class.
- Projects: A series projects, assigned from a Monday to the second following Monday. However, this might vary according to pace and vacation schedule.
- Project grading: Projects are generally scored on a 0 to 5 scale, with 5 being reserved for excellent projects. Grade depends on correctness, completeness, and presentation. Use of Subversion, Makefiles and file and folder names as requested are a must.
- Lateness: One week grace automatic on projects. Over one week late, one point off for each week late. No lateness for quizzes.
- Last day of class is Tuesday, December 10-th. All work to be done by that date.
- Class grading: After normalizations, 60% projects, 40% quizzes.

- Computers:
  - We will be working in various modes. I recommend strongly that you have your own computer to work on. We will install Virtual Box and work on virtual machines hosted by Virtual Box.
  - If you do not have a computer of sufficient power to work comfortably with Virtual Box, please we will discuss options.
  - We will make extensive use of subversion, a source code control system. You will turn in your assignments using subversion, and if you use subversion, I and the TA can help you by examining and correcting your code, at any time and from any location, when we are on-line.

- New media:
  - There is a CSC521 topic on my blog. It includes both my posts and as a sub-category the grader’s posts.
  - You follow twitter.com/cs521. I will keep it super-low traffic for the courtesy of those who want to enable SMS.

- Contact:
  - Office hours: We have to work this out. People often need help with C and Linux.

- Writing credit:
  - Writing credit is offered. The student submits three essays of length 1500 words each (not counting references section, if any) on a subject related to computer operating systems, technical, historical, or even market-business.
  - New: Recommended:
    - *Mythical Man-Month*, possibly the most influential software engineering/operating systems book ever.
    - A second recommendation is E. Raymond's *Cathedral and Bazaar*.

- Grants/Sponsorship:
  - Thanks to Amazon: for a grant under their AWS for Education program, to explore cloud computing, and integrate cloud computing concepts into the course.
This work is licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License.
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

<table>
<thead>
<tr>
<th>School/College: AS - College of Arts and Sciences</th>
<th>Dept: CSC</th>
<th>Course: CSC423</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Is this an experimental course?</th>
<th>☐ N ☐ Y</th>
<th>Effective Date: Now</th>
<th># of Credits: 3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Is taken for Credit Only:</th>
<th>☐ N ☐ Y</th>
<th>Full Time Indicator*:</th>
<th>☐ N ☐ Y</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Frequency:</th>
<th>30 - By Announcement</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Abbreviated Title: Database Systems</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Full Title: Database Systems</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Prerequisites: CSC317</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Co-requisite(s):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Identifiers:</th>
</tr>
</thead>
</table>

| Course Description: Information models and systems. Database systems. Data modeling. Relational databases. Relational database design. Database query languages, Data mining concepts, Web database programming. |

<table>
<thead>
<tr>
<th>Dept Contact: Geoff Sutcliffe</th>
<th>Email address: <a href="mailto:geoff@cs.miami">geoff@cs.miami</a></th>
<th>Phone: x2158</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Department Chair Signature: [Signature]</th>
<th>Date: 1-14-2014</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Academic Dean/Director Signature:</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dean of the Graduate School:</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Curriculum Committee Chair:</th>
<th>Date:</th>
</tr>
</thead>
</table>

*Justification for course being worthy of full time status must also be submitted (see second page).*
Course and Curriculum

Course Addition Request

Phone: (305) 284-4846
Fax: (305)284-6293
Email: scheduling.reg@miami.edu

Please fill in all of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course: CSC423</td>
<td>e.g. (ACC:101)</td>
<td></td>
</tr>
</tbody>
</table>

**Full-time status rationale** This is only required for courses flagged as being equivalent to full-time status.

Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduates; 9+ credits for graduate).

<table>
<thead>
<tr>
<th>Course Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major/Minor:</strong> O Y O N</td>
</tr>
</tbody>
</table>

- School Code:
- Level Code:
- Class Code: OR; Secondary Class Code:
- Minimum GPA: ____
- Identifier (1): ______
- Identifier (2): ______
- Permission Required:

| Co-Requisite Course (1): ____ | Section: ___ | Type: |
| Co-Requisite Course (2): ____ | Section: ___ | Type: |
| Co-Requisite Course (3): ____ | Section: ___ | Type: |
| Co-Requisite Course (4): ____ | Section: ___ | Type: |
| Co-Requisite Course (5): ____ | Section: ___ | Type: |
Instructor: Dr. Nei-Ling Shyu
Office: EB 515, 335-284-5566
E-mail: shyu@miami.edu
Course Website: http://www.courses.miami.edu/
Room and Schedule: MM 211, TR 11:00 AM - 12:15 PM
Office Hours: TR 9:50 AM - 10:50 AM or by prior appointment
Database system design, modeling, implementation, and management methodologies and techniques. Different database systems including relational, object-oriented, object-relational, and distributed database systems. Internet (WWW) technology, data warehousing, and online analytical processing applications of database management systems. Hands-on experience with commercial database systems.
Prerequisite: EEN 218
References:
  - Database System Concepts
  - Modern Database Management
  - Database Systems Using Oracle: A Simplified Guide to SQL and PL/SQL
Topics:
  - Introduction to database systems: databases, database management systems, history, advantages and disadvantages.
  - Database environment: architecture and database modeling.
  - Relational model and languages: relational model, relational algebra, relational calculus, SQL and normalization.
  - Database system applications: WWW, Data Warehousing, online analytical processing (OLAP), and data mining.
  - Commercial database systems.
Grading Policy:
  Exams: 30%
  Projects: 30%
  Assignments and Quizzes: 33%
  Class Participation: 5%
Note:
  - No unexcused late assignments/projects will be accepted.
  - No make-up for the exam will be given unless the student can provide proof(s).
  - The University of Miami Honor Code was established to preserve the academic integrity of the student body, to encourage consistent ethical behavior among Undergraduates/Graduates, and to foster a climate of fair competition.
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

<table>
<thead>
<tr>
<th>School/College: AG - College of Arts and Sciences</th>
<th>Dept: CSC</th>
<th>Course: CSC424</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this an experimental course? O N O Y</td>
<td>Effective Date: Now</td>
<td># of Credits: 3</td>
</tr>
<tr>
<td>Is taken for Credit Only: O N O Y</td>
<td>Full Time Indicator*: O N O Y</td>
<td>Alt Title: O N O Y</td>
</tr>
<tr>
<td>Frequency: 05 - Fall &amp; Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abbreviated Title: Computer Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Title: Computer Networks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prerequisites: CSC314, CSC322</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifiers:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(WRITE, HONOR, INTR1, INTR2, INTR3, INTR4, etc.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Dept Contact: Geoff Sutcliffe</th>
<th>Email address: <a href="mailto:geoff@cs.miami">geoff@cs.miami</a></th>
<th>Phone: x2158</th>
</tr>
</thead>
</table>

Department Chair Signature: _____________________________ Date: 1-14-2014

Academic Dean/Director Signature: _______________________ Date: _____

Dean of the Graduate School: ____________________________ Date: _____

Curriculum Committee Chair: ____________________________ Date: _____

*Justification for course being worthy of full time status must also be submitted (see second page).
Course and Curriculum
Course Addition Request

Please fill in all of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course: CSC424</td>
<td>e.g. (ACC 101)</td>
<td></td>
</tr>
</tbody>
</table>

**Full-time status rationale** This is only required for courses flagged as being equivalent to full-time status. 
(Include how the course is equivalent to full-time credit [12+ credits for undergraduates; 9+ credits for graduates].)

**Course Requirements:**

|--------------------|------------|------------|------------|

School Code: 
Level Code: 
Class Code: OR; Secondary Class Code:
Minimum GPA: 
Identifier (1): 
Identifier (2): 
Permission Required:

Co-Requisite Course (1): | Section: | Type: |
|-------------------------|---------|-------|
Co-Requisite Course (2): | Section: | Type: |
Co-Requisite Course (3): | Section: | Type: |
Co-Requisite Course (4): | Section: | Type: |
Co-Requisite Course (5): | Section: | Type: |
Table of contents:

- Syllabus
- Announcements
- Class notes
- Pop quizzes
- Assignments
- References

Announcements

- MIDTERM SURVEY
- midterm survey results
- FINAL SURVEY
  The final grade is included in your grade according to a point sharing scheme:
  The number of respondents is the grade for each respondent.
- final survey results

Syllabus

- Textbook: Computer Networks and Internets, Fifth Edition by Douglas E Comer (textbook web site)
  - 2008 Higher Education Opportunity Act information:
  - Amazon sells it for $114.47. There is no tax and can ship free.
  - Or you can rent it (see the amazon page) for $48.25 the semester.
  - The Kindle edition went up from $61.47, to over $100. What's that about?
    Doesn't seem worth it.
  - At the moment, Amazon will exchange the book for a $65 gift card. If true,
    your price is only about $55 dollars — but in that case renting seems surer.
- Course structure:
• The course is project based. There will be pop quizzes, several projects.
  • _Twitter_: http://twitter.com/csc524. Please follow it — I use it as my private reverse-911 line for the course.
  • _Blog_: Please refer to http://blog.cs.miami.edu/burt/category/csc524/ for class reading.
  • _Grader/TA_: Basar Koc b dot koc at umiami dot edu.
  • _Grading_: 30% quizzes, 70% projects. There is a midterm and final survey that is required. But as it is anonymous it is hard to make it required really.
  • Projects are graded on a 5 points scale. There is 3 day's grace for lateness. A project due on the first has until midnight of the 4-th. Afterwards 1 point is subtracted per week (each 7 days) from that instant for a maximum of 3 points of lateness.
  • Projects:
    • Projects are programming projects, done in C on Unix.
    • You will share and submit your projects using the departmental subversion site, svn.cs.miami.edu.
    • You will use Makefiles so that the graders an assistants can build your projects from source, and are guided in your test suites.
    • You will make test suites for your code. I want to know what you mean when you say your project works — what things does it do or not do, according to your test suites.
    • You will gain experience working with a co-located machine (Amazon AWS) thanks to a grant from Amazon.
    • You will also install Virtual Box (or similar) as an alternative platform for your programming.
    • The gold standard will be to compile and run on Ubuntu, Precise Pangolin (12.04 LTS) - although AWS has their own which I think we be consistent with as well.
    • You can also have a lab account if you wish. All these will be synced by subversion and Makefiles will rebuild on each platform.
    • Mac, Windows, Unix: since we are on virtual and cloud machines, these platform considerations are sidestepped. Except you might want to work local.
    • For Mac, download XCode and you should be mostly fine ... it might get messy with SSL as they have their own framework.
    • For Windows local developement, I recommend installing cygwin. Visual Studio is powerful, but I think it is Microsoft centric (?) anyone know otherwise ?) and outside of that Microsoft didn't really develop command line development tools (as in ... no grep?). But I've had great results with Cygwin.
    • For a cloud machine, on Mac Textwrangler makes editing a file by sftp as easy as a localfile.
• Writing credit: optionally the student may elect for wiring credit.
  • The requirement for W is three essays each of at least 1500 words
  • Topics related to computer communications, or cyberspace, at least one non-fiction.
  • First paper must be submitted by mid-term
  • Submit papers in a standard format by subversion. Place them in a subdirectory _writing-credit_.
• Thanks to Amazon for a grant under their AWS for Education program, to explore cloud computing, and integrate cloud computing concepts into the course.
Class notes

- Introduction (more/less)
  - OSI Model (from Cisco Internetworking Handbook)
    - Use of the layered model; Internetworks, LAN, WAN
    - Peer to peer communications; up and down the stack
    - Encapsulation, demultiplexing
  - Switching versus routing, LANS versus WANS, networking versus
    internetworking
    - Level 2 switching of e.g. an ethernet frame
    - Level 3 routing of e.g. a IP packet
    - Level 4 is either a UDP packet or a TPC segment
    - Protocols for the entire OSI networking stack
  - Discussion of addresses, MAC, IP and DNS (a bit of a lie).
  - TFTP packet dissection
  - Sockets (unix access to networking, at the Level4/5 interface)
    - Beej's Guide to Network Programming (PDF)
- The IP protocol, Part I (more/less)
  - RFC 791 - INTERNET PROTOCOL
  - Wikipedia article on IPv4 and IPv6
  - Addresses, networks, and subnets: Classful and CIDR
  - Private/Local addresses, Zeroconf addresses.
  - NAT, PAT, port forwarding and fixups.
  - IPv6 and renumbering
- Datagram service, UDP (more/less)
  - UDP: User Datagram Protocol, packet communications. (RFC 768)
  - Port numbers
    - Well Known Ports (a.k.a. Reserved),
    - Registered ports
    - Ephemeral ports (a.k.a. dynamic)
  - Examples of UDP
    - DNS RFC 1034 RFC 1035 RFC 2181 RFC 2308
    - DHCP/BOOTP RFC 2131
    - TFTP, see also RFC 1350.
- The IP Protocol, Part II (more/less)
  - Local delivery: RFC 826 - ARP
  - RFC 2453: RIP2
    - Distance Vector
    - Counting to infinity
    - Split horizon, poison reverse, triggered updates
    - Default routers, subnets, authentication, and RIP2
    - routing notes
    - RIP protocol
  - OSPF: Link state protocols
  - Autonomous systems and BGP
  - IP fragmentation
  - ICMP, ping, tracert, and host routing tables.
- Connection service, TCP protocol (more/less)
  - TCP: Transmission Control Protocol. (RFC 793)
  - Class notes
- Segment management and acknowledgements (example)
- Connection establishment
- Resend timers, Karn's algorithm
- Congestion control: Slow start and Multiplicative decrease. (Also, Fast retransmit, and other just-so stories) See RFC 2001
- Silly window syndrome, Nagel's algorithm
- Network and port address translation

○ Example session:
  - email: SMTP, 822 headers, and MIME ; POP and IMAP
  - HTTP, HTML, CSS, CGI, SHTML, DHTML, and so on.
  - CGI test
    - A POST form.
    - A GET form.
    - A CGI reference.
    - A PUT protocol trace
  - Web technologies
  - FTP, passive, interaction of protocols

- Network security, protocols, and cryptography (more/less)
  - crypto talk
  - Cryptography: Godzilla crypto tutorial by Peter Gutmann.
  - SSL and the PKI
    - SSL notes
    - Secure Socket Layer
    - PKI and certificates
    - SPKI
  - Authentication
    - Authentication
    - SSO and CAS
    - CAS Tracing
    - Zero-knowledge protocols
  - Attacks and countermeasures:
    - Morris worm (1988)
    - Melissa macro (1999)
    - the ccode for Melissa
    - Samy is my hero: cross-site javascript injection (2005)
    - stack smashing (1996)
    - DNS cache poisoning (2008)
    - Firewalls, NAT, Proxies and Packet Filters: Firewall based security architecture
  - Email issues (mostly Spam, but also Phishing)
    - Email authentication, Trust in Email begins with Authentication, Messaging Anti-Abuse Working Group, March 2008.
    - SPF: Sender Policy Framework
    - DKIM
    - Sender Base and Sender Score (reputation systems)
    - Blacklists, Whitelists, Greylists
    - Feedback systems, and engagement systems. See article.

- Link level communications (more/less)
  - Crash course in communication theory.
    - The Shannon-Hartley Theorem (see Wiki)
      - RC circuits
- Shannon Source Coding Theorem
- Shannon Noisy Channel Coding Theorem
- References:
    http://www.stanford.edu/class/ee104/shannonpaper.pdf
- Modulation and line codes:
  - RS-232: Baseband NRZ codes (NRZ and NRZI slides courtesy RPI)
  - 80Base-T, Manchester Encoding
  - 100Base-TX, MLT-3 and 4B5B line encoding.
  - AM, FM, PSK (slide courtesy RPI)
  - Spread spectrum
- Error: repetition codes, Hamming codes (PDF)
- Ethernet
  - Overview
  - Cisco Documentation
  - 802.3
  - Layer 2 1/2: DIX, 802.3, 802.2 SNAP
  - CRC-32 error checking for all 802.3
  - Ethernet adddressology
  - CSMA-CD, jamming, network size, exponential backoff
  - Full duplex (no collisions)
  - 100Base-TX special stuff: SSD, ESD and idle group
  - Gig-E: 4 pairs used, PAM-5 encoded, Trellis code, carrier extension and bursting
- Wi-Fi
  - Class blog about WiFi.
  - Technical Tutorial by Pablo Brenner from Breezecom.
  - Javvin documentation
  - Cisco documentation
- Bridges, Switches, Hubs and Repeaters
  - Transparent bridges.
  - Spanning Tree Protocol
  - VLAN's

Quizes

- Quiz 1 posted. Copy [repo]/class/quiz/quiz1.txt to [repo]/my-dir/quiz/quiz1.txt and edit with your answers.
  Due before class on Wed, Jan 30.
- Quiz 2 posted. Copy [repo]/class/quiz/quiz2.txt to [repo]/my-dir/quiz/quiz2.txt and edit with your answers.
  Due before class on Wed, Feb 6.
- Quiz 3 posted.
  Due before class on Wed, Feb 13.
- Quiz 4 posted.
Due before class on Wed, Feb 20.
- Quiz 5 posted (actually it is a survey
  Special due date: Monday, March 11.
- Quiz 6 posted.
  Due before class on Wed, March 20.
- Quiz 7 posted.
  Due before class on Wed, April 3.
- Quiz 8 posted.
  Due before class on Wed, April 24.
- Quiz 9 (the final) posted (actually it is a survey
  Special due date: Monday, May 6.

Reading

- Chapters 1 and 2 in Comer.
- Chapter 3 in Comer, assigned Jan 24.
- Beej's Guide to Network Programming (PDF)
- Chapters 13 and 20 through 23 in Comer.
- Chapters 24 through 27 in Comer.

Assignments

- Project 1: Ping Familiarization Project
  Due: Monday, 28 Wednesday, 30 January.
- Project 2: Netcat Project.
  Due: Monday, 11 February.
  - See the completed Netbounce Project for sample code.
  - Test with an AWS server (ports 3333 through 3339 are open) and your
    virtual machine.
  - Your your Makefile should run a test suite. I will most likely test that small
    and large text (ASCII) files will transfer, and small and large binary files will
    transfer. Check that the transferred file is the same as the sent file.
  - Submit by subversion with log message "submitting for grading".
- Project 3: Pass-it-on Project.
  The signature code can be found in [repo]/class/proj3/signature.c.
  The peer registry of running passiton servers is found at the bottom of the
  project page.
  To run your program while you are logged out of AWS, use "nohup ./pass-it-on
  &". To get rid of all pass-it-on instances launched nohup, use "killall pass-it-or".
  Change notice: For your password, don't use your real password, use your
  username concatenated with itself. So that "burt" is "burttburt". This simplifies
  things and sufficiently demonstrates the principles. The T mode is then
  deprecated.
  Due: Monday, 25 February.
- Project 4: The TFTP Project
  Due: Monday, March 25.
  - Read the RFC 1350 on TFTP.
  - Here is a packet trace and dissection for the first packet, for your reference.
  - You can collect these things using sudo tcpdump -i lo -X -nn, where
    milage may vary on the interface name "lo", do ifconfig -a to see the names
    of your interfaces.
  - To avoid firewall issues, it is ok to test this on localhost.
• A test suite will be provided in the [repo]/class/proj4/test directory.

• Project 5: Webserver Project
  
  **Due: Monday, April 15**
  
  • Information on the HTTP Protocol.
  • Implement: GET and POST.
  • For GET queries you will need to understand percent encoding.
  • First implement a server of fixed pages, then launch processes to handle the request, if it is a POST or a GET with a query appended.
  • To serve a fixed page, the URL will give the name of a file (if it is a pathname, send back a not found error), and send that back to the client, with the appropriate headers added: Content-Type and Content-Length are really necessary.
  • If the URL is a query or a POST, start the program named in the URL, send the query to the program through stdin and stream to the requester what the program writes to stdout.
  • To direct your browser to test your server, you can use the syntax ec2-50-19-171-60.compute-1.amazonaws.com:3337 for port 3337.
  • See information on piping stdin and stdout for more help with this.

• Project 6: Webservices Project
  
  **Due: Wednesday, May 1**
  
  • Building off of project 5, we will write a toy webservices application that does a simple four function calculator.
  • Write a CGI program launched by your webserver that takes three CGI encoded arguments, \(a\), \(b\) and \(c\) and returns the result of the calculation \(a \cdot b\); \(c\) can be "ADD", "SUB", "MUL" or "DIV", and \(a\) and \(b\) are floating point values. It would look like this:

  ```
  POST /calc HTTP/1.1
  Host: myhost.dummy.to
  Content-Length: 18
  Content-Type: application/x-www-form-urlencoded
  
  cp=ADD&a=1.0&b=2.0
  ```

  • You should return a complete web page, that nicely displays, in this case, that \(1.0 + 2.0 = 3.0\), or similar.

**References**

• Additional textbooks:
  • Radia Perlman, Interconnects: Bridges, Routers, Switches and Internetworking Protocols.
  • William R. Cheswick and Steven M. Bellovin, Firewalls and Internet Security: Repelling the Wily Hacker.

• General Networking
  • Network Programming course at RPI by Dave Hollinger.
  • Cisco: Internetworking Technology Handbook

• Software engineering for security
  • Demystifying Suid, Wagner et. al, Usenix.

• WEP
○ My RC4 example.
○ CRC-32 failure of WEP.
○ SecurityFocus review
○ KoreK attacks in chopper.
  Korek explains some of them.
○ Weakness in the Key Scheduling Algorithm of RC4 Scott Fluhrer, Itsik Mantin, Adi Shamir.
○ Using the Fluhrer, Mantin, and Shamir Attack to Break WEP Adam Stubblefield, John Ioannidis, Aviel Rubin.
○ AirSnort source code.

- SSL
  ○ HP Tutorial
  ○ Secure Socket Layer
  ○ My short tutorial
  ○ IBM developer works, Open SSL Part 1
  ○ IBM developer works, Open SSL Part 2
  ○ IBM developer works, Open SSL Part 3
  ○ OpenSSL Command Line Reference

- Exploits
  ○ New LAND attack
  ○ Teardrop
  ○ Speed Pass broken, Rubin et. al.
  ○ Word/Excel Reuse RC4 stream.
  ○ SANS Tutorial: Why your switched network isn't secure.
  ○ TCP/IP Weakness, Robert Morris
  ○ Bellovin, TCP/IP Security Issues

- Virus
  ○ Virus creation
  ○ Melissa
  ○ Virus catelog
  ○ CIAC Melissa bulletin.
  ○ MySpace worm

- Open Source Security Response Philosophy
  ○ Full disclosure principals for mozilla.
  ○ Mozilla security response document.
  ○ Full disclosure document.

- Secure Operating Systems
  ○ gsecurity, a secure linux extension.
  ○ Secure Linux from the NSA.
  ○ PaX, page-executable kernel modifications.

- RFC's
  ○ RFC 768: User Datagram Protocol
  ○ RFC 791: INTERNET PROTOCOL
  ○ RFC 793: TRANSMISSION CONTROL PROTOCOL
  ○ RFC 821: SIMPLE MAIL TRANSFER PROTOCOL
  ○ RFC 822: STANDARD FOR THE FORMAT OF ARPA INTERNET TEXT MESSAGES
  ○ RFC 826: ARP
  ○ RFC 1034: DOMAIN NAMES - CONCEPTS AND FACILITIES
  ○ RFC 1035: DOMAIN NAMES - IMPLEMENTATION AND SPECIFICATION
- RFC 1058: Routing Information Protocol
- RFC 1350: THE TFTP PROTOCOL (REVISION 2) (obsoletes RFC 783)
- RFC 1939: Post Office Protocol - Version 3
- RFC 2001: TCP congestion
- RFC 2045: MIME
- RFC 2046: MIME
- RFC 2131: DHCP/BOOTP
- RFC 2181: DNS clarifications
- RFC 2222: Simple Authentication and Security Layer (SASL)
- RFC 2308: DNS negative caching
- RFC 2453: RIP2
- RFC 2692: SPKI Requirements
- RFC 2693: SPKI Certificate Theory
- RFC 2821: Simple Mail Transfer Protocol. (obsoletes RFC 821)
- RFC 2822: Internet Message Format. (obsoletes RFC 822)
- RFC 2829: Authentication Methods for LDAP
- RFC 3207: STARTTLS extension for SMTP
- RFC 3700: Internet Official Protocol Standards
- RFC 4398: Storing certificates in DNS
- RFC 4871: DKIM
- RFC 4987: TCP SYN Flooding Attacks and Common Mitigations

- IPv6
  - ABC of IPv6
  - IPv6 Concepts
  - IPv6 Cheat Sheet
- Port Knocking
- Cookies
  - Wikipedia article
  - Cookiecentral
  - See also relevant RFC's.

- Topics for next term
  - Keychains, methods of key diversity
  - Spam and Phishing counter-measures
  - Amir Herzberg course.
  - Kaminski at HAR2009 (1 of 7)
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

<table>
<thead>
<tr>
<th>School/College: AS - College of Arts and Sciences</th>
<th>Dept: CSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is this an experimental course? Q N Q Y</td>
<td></td>
</tr>
<tr>
<td>Effective Date: Now</td>
<td></td>
</tr>
<tr>
<td>Is taken for Credit Only: Q N Q Y</td>
<td></td>
</tr>
<tr>
<td>Full Time Indicator*: Q N Q Y</td>
<td></td>
</tr>
<tr>
<td>Alt Title: Q N Q Y</td>
<td></td>
</tr>
<tr>
<td>Frequency: 11 - Spring</td>
<td></td>
</tr>
<tr>
<td>Abbreviated Title: Theory of Comp</td>
<td></td>
</tr>
<tr>
<td>Full Title: Theory of Computing</td>
<td></td>
</tr>
<tr>
<td>Prerequisites: CSC220, MTH309</td>
<td></td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td></td>
</tr>
<tr>
<td>Identifiers:</td>
<td></td>
</tr>
<tr>
<td>Course Description: Sets, relations, and languages. Automata theory. Basic computability theory. Turing machines. The complexity classes P and NP.</td>
<td></td>
</tr>
</tbody>
</table>

Dept Contact: Geoff Sutcliffe Email address: geoff@cs.miami Phone: x2158

Department Chair Signature: [Signature] Date: 1-14-2014

Academic Dean/Director Signature: [Signature] Date: 

Dean of the Graduate School: [Signature] Date: 

Curriculum Committee Chair: [Signature] Date: 

*Justification for course being worthy of full time status must also be submitted (see second page).*
## Course and Curriculum
### Course Addition Request

Please fill in **all** of the below information:

<table>
<thead>
<tr>
<th>Year: 2014</th>
<th>Semester: Yes</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course: CSC427</td>
<td>e.g. (ACC 111)</td>
<td></td>
</tr>
</tbody>
</table>

**Full-time status rationale**
This is only required for courses flagged as being equivalent to full-time status.

*Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).*

---

### Course Requirements:

|--------------------|------------|------------|------------|

School Code:  
Level Code:  
Class Code:  
OR; Secondary Class Code:  
Minimum GPA: _  
Identifier (1):  
Identifier (2):  
Permission Required:  

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
CSC527 – Theory of Computation
Spring 2013

Syllabus

Instructor: Dimitris Papamichail
Office: Ungar 403
Email: d.papamichail@miami.edu
Office Hours: 5pm-6pm Monday and Tuesday, and by appointment.
Course Time: 3:35pm-4:50am Monday and Wednesday.
Place: Memorial building, room 108.
TA: Negin Arhami, n.arhami1@umiami.edu. Please check lab 426 for her office hours.

Prerequisites: CSC220 and MTH 309 or equivalent. Prerequisite requirements may be waived with permission of the instructor.

Textbook: The textbook for the course will be:


Material: This course studies fundamental abstract computational models and their computational power, exploring constructive proofs to show that a model is capable of solving certain problems as well as proofs by diagonalization/contradiction to show that a model is incapable of solving certain problems. The topics covered include:

- sets, relations, and languages;
- deterministic and nondeterministic finite automata;
- regular expressions;
- context-free grammars and pushdown automata;
- the pumping lemma;
- basic computability theory;
- deterministic and nondeterministic Turing machines;
- undecidable problems;
- computational complexity classes;
- P and NP;
- NP-complete problems.

Grading: The coursework consists of homework assignments (40%) and multiple (in-class) exams (60%). Below are the details.

- Homework: Homework problem sets consist of problems taken from the textbook but may
be selected from other sources. Percentage of correct answers will be used as the grade of an assignment. For the final course grade, the lowest homework grade will be removed from consideration. For example, if there are nine assignments and a student receives 80% on three, 0% on two, and 50% on four, then one of the two 0% will be removed from consideration and the average percentage of the remaining eight, \((80 \times 3 + 0 + 50 \times 4)/8 = 55\%\), will be the homework grade.

- **Exams:** There will be four in-class exams and there will be no finals. The "drop-the-lowest-grade" rule is applied in the exams as well. The grades from the exams will make equal contributions to the final grade.

- **Policy Regarding Collaboration:** Collaborations on homework assignments are permitted as long as they are limited to figuring out the nature of the problems at hand and discussing how to solve them. However, collaborations beyond this limit, such as writing down a solution collaboratively and/or copying someone else's solution with slight modifications, are prohibited. Violations will result in grade reduction.

- **Collection of Homework Papers, Tardiness:** Homework papers will be due at midnight on the due date (11:59pm). Late submissions are accepted, but the grade will be reduced by 25% times the number of days they are late.

- **Make-ups:** Because homeworks and exams are subject to the "drop-the-lowest" rule, there will be no make-ups for them. Extenuating circumstances (illness and accidents) will be considered if students provide official letters proving their inability to attend class.

**Rules of the Game:**

1. Course handouts, material, homework assignments, etc. will be available in blackboard after being presented in class, along with the latest announcements. Please check it out often. I will try to accompany important announcements with email notifications.

2. Because a primary goal of the course is to teach professionalism, any academic dishonesty will be viewed as evidence that this goal has not been achieved, and will be ground for receiving at least a failing grade and possible disciplinary action. For details, please refer to the Honor Code of the University of Miami at:

   [http://www.miami.edu/dean-students/pdf/undergrad_honorcode.pdf](http://www.miami.edu/dean-students/pdf/undergrad_honorcode.pdf)

3. This course is not new, but I am teaching it for the first time, and it is in development, so there could be changes/adjustments to the material, homework assignments, and exams.

4. The required textbook is well written and will be followed to the greatest extent, but slight deviations may occur on a few subjects. It is highly recommended that you study the relevant sections from the book. My presentation and other notes will be made available on blackboard.
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

School/College: AS - College of Arts and Sciences
Dept: CSC
Course: CSC431
Is this an experimental course? □ N □ Y
Effective Date: Now
# of Credits: □ 3
□ 1 (1-3 or 3-0)
Is taken for Credit Only: □ N □ Y
Full Time Indicator*: □ N □ Y
Alt Title: □ N □ Y

Frequency: 05 - Fall & Spring

Abbreviated Title: Software Engg
18 Character Limit

Full Title: Introduction to Software Engineering
150 Character Limit

Prerequisites: CSC322 or CSC317

Co-requisite(s):

Identifiers:
(WRITE, HONR, INTR1, INTR2, INTR3, INTR4, etc.)


1422 Character Limit

Dept Contact: Geoff Sutcliffe
Email address: geoff@cs.miami
Phone: x2158

Department Chair Signature: Date: 1-14-2014

Academic Dean/Director Signature: Date:

Dean of the Graduate School: Date:

required for graduate courses only

Curriculum Committee Chair: Date:

*Justification for course being worthy of full time status must also be submitted (see second page).
# Course and Curriculum

## Course Addition Request

Phone: (305) 284-4845  
Fax: (305) 284-6293  
Email: scheduling.rg@miami.edu

<table>
<thead>
<tr>
<th>Please fill in all of the below information:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year:</strong> 2014</td>
</tr>
<tr>
<td><strong>Course:</strong> CSC431</td>
</tr>
<tr>
<td>e.g. (ACC 101)</td>
</tr>
</tbody>
</table>

### Full-time status rationale
This is only required for courses flagged as being equivalent to full-time status.  
Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).

<table>
<thead>
<tr>
<th>Course Requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major/Minor:</strong> QY QN</td>
</tr>
<tr>
<td><strong>Major (1):</strong></td>
</tr>
<tr>
<td><strong>Minor (1):</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Code:</td>
</tr>
<tr>
<td>Class Code:</td>
</tr>
<tr>
<td>OR; Secondary Class Code:</td>
</tr>
<tr>
<td>Minimum GPA:</td>
</tr>
<tr>
<td>Identifier (1):</td>
</tr>
<tr>
<td>Identifier (2):</td>
</tr>
<tr>
<td>Permission Required:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
CSC 513  Software Engineering

Instructor:  Dr. Iman Saleh
imani@miamic.edu, Office: 305-284-2658

Co-Instructor:  Dr. M. Brian Blake,
M.Brian.Blake@miami.edu, Office: 305-284-4154

Office:  Graduate School - 101 Albert Pick Hall

Office Hours:  Please set an appointment by letting me know in class/ by e-mail
Course Time:  TTh 9:30-10:45am  (1/14 – 4/24)
Location:  MM-202

Textbook:  Object-Oriented Software Engineering: Using UML, Patterns and Java
Bernd Bruegge, Adjunct, Carnegie Mellon University
Allen H. Dutoit, Technical University of Munich

(THESE IS FOR REFERENCE)

Grading:  Course Assignments 20%, Participation 10% (Based on In-class projects)
In-Class Exams 30%, Final Project 40%

Description:
The purpose of this course is to teach the student how to design and develop large software systems. A
term project is assigned that implements the techniques described in the course on a real world problem
with corporate partners. Students work on this project in teams each week through the course they learn
different aspects of software engineering. Topics covered include: software reliability and its
implications; the software development lifecycle; object and software modeling using the Unified
Modeling Language (UML); cost-benefit analysis; and rapid prototype development. The class will
consider the impact of innovations such as, event-based programming, distributed programming, and
Internet technologies Additional topics that may be covered are software estimation, design patterns,
aspect-oriented design, and model-driven architecture. Prerequisites: Familiarity with a higher-level
programming language is the only pre-requisite.

Jan 14  Class Overview (Introductions, Intro to the Class)

Jan 16  Overview of Software Engineering, Objects, Software Lifecycles

Jan 21  Problems Statements
Assignment 1 – Problem Statement Exercise

Jan 23  Finish Problem Statement

Jan 28  Corporate Presentations
Assignment 1 - DUE

Jan 30  Configuration Management
Assignment 2 – Groups need to set-up your CM environments

Feb 4   Configuration Management – Setting Up Google SVN
Assignment 2 DUE
Assignment 3 – Requirements Exercise
Feb 6  
*Requirements Engineering – Requirements Elicitation – Scenarios*
Assignment 4 – Use Case Exercise

Feb 11  
*Use Cases and Rational Rose Demonstration*
Assignment 3 DUE

Feb 13  
*UML Modeling: Class Diagrams*
Assignment 4 DUE

Feb 18  
UML Modeling: Class Diagrams (Exercises)

Feb 20  
UML Modeling: Class Diagrams (Exercises)

Feb 25  
Test Review (Game-Show Format)
Assignment 5 DUE - First Deliverable (Final Project)

Feb 27  
Test

Mar 4  
*UML Modeling: Interaction Diagrams*
Assignment 6 – (First Class Diagram and 3 Sequence Diagrams for Final Projects)

Mar 6  
*UML Modeling: Interaction Diagrams*

Mar 8-16  
**SPRING BREAK**

Mar 18  
*UML Modeling: State and Activity Diagrams*

Mar 20  
*Prepare Initial Class Diagrams & Interaction Diagrams for Project (Independent Work)*
Assignment 6 DUE

Mar 25  
Mapping Models to Code

Mar 27  
Design Patterns

Apr 1  
Interim Project Presentations in Class (Q&A)

Apr 3  
Interim Project Presentations in Class (Q&A)

Apr 8  
*Agile Software Development*
Assignment 7 DUE – Updated Final Project Report

Apr 10  
*Software Estimation*

Apr 15  
*Service-Oriented Architecture*

Apr 17  
*Group Presentations*

Apr 22  
*Group Presentations*

Apr 24  
*Group Presentations*

May 7  
Final Project Reports Due
Course and Curriculum
Course Change Form

Course as it appears in the Bulletin:

School/College: AS - College of Arts and Sciences  Dept: Religious Studies  Course: REL 408
Is this an experimental course? ☐ N ☑ Y  Effective Date:  # of Credits: e.g. (1-3 OR 3-0)
Full Title: __________________________________________________________
Abbreviated Title: ____________________________________________________

Course as you wish it to appear in subsequent Bulletin(s) – only fill in changing information:

Full Title: __________________________________________________________
Abbreviated Title: ____________________________________________________
Is taken for Credit Only: ☐ N ☑ Y  Full Time Indicator*: ☐ N ☑ Y  Alt Title: ☐ N ☑ Y
Frequency: __________________________________________________________
# of Credits: _________________________________________________________
Prerequisites: _________________________________________________________
Co-requisite(s): _______________________________________________________
Identifiers: (WRITE, HONORS, INTR1, INTR2, INTR3, INTR4, etc.)
Course Description: We are requesting that course REL 408 be changed from Graded to Credit/No Credit.

If Course Description does not fit on 3 lines please email full description to:
cp.scheduling@u.edu

Dept Contact: Beatriz Pina  Email address: b.pina@miami.edu  Phone: 84733

Department Chair Signature: ____________________________  Date: 01/12/11
Academic Dean/Director Signature: ________________________  Date: __________
Dean of the Graduate School: _____________________________  Date: __________
Curriculum Committee Chair: _____________________________  Date: __________

*Justification for course being worthy of full time status must also be submitted.
## Course and Curriculum
### Course Change Request

Only fill in changing information:

| Year: | Semester: | School/College: AS - College of Arts and Sciences |

**Course:** REL 408 
*E.g.* (ACC 101)

**Full-time status rationale** This is only required for courses flagged as being equivalent to full-time status.

*Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).*

### Course Requirements:


- **School Code:**
- **Level Code:**
- **Class Code:** OR; Secondary Class (1)
- **Minimum GPA:**
- **Identifier (1):**
- **Identifier (2):**
- **Permission Required:** No

| Co-Requisite Course (1): | Section: | Type: |
| Co-Requisite Course (2): | Section: | Type: |
| Co-Requisite Course (3): | Section: | Type: |
| Co-Requisite Course (4): | Section: | Type: |
| Co-Requisite Course (5): | Section: | Type: |
Course and Curriculum
Course Change Form

Course as it appears in the Bulletin:

School/College: AS - College of Arts and Sciences  Dept: Religious Studies  Course: REL 409
Is this an experimental course?  O  N  Y  Effective Date:  # of Credits: 

Full Title: 
150 Character Limit

Abbreviated Title: 
18 Character Limit

Course as you wish it to appear in subsequent Bulletin(s) – only fill in changing information:

Full Title: 
150 Character Limit

Abbreviated Title: 
18 Character Limit

Is taken for Credit Only:  O  N  Y  Full Time Indicator*:  O  N  Y  Alt Title:  O  N  Y

Frequency:  # of Credits: 
  e.g. (1-3 OR 3-0)

Prerequisites:  

Co-requisite(s):  

Identifiers:  
(WRITE, HUNE1, INTR1, INTR2, INTR3, INTR4, etc.)

Course Description:  We are requesting that course REL 409 be changed from Graded to Credit/No Credit.

If Course Description does not fit on 3 lines, please email full description to:
rg.scheduling@miami.edu

Dept Contact: Beatriz Pina  Email address: b.pina@miami.edu  Phone: 84733

Department Chair Signature:  Date: 01/13/14

Academic Dean/Director Signature:  Date: 

Dean of the Graduate School:  Date: 
required for graduate courses only

Curriculum Committee Chair:  Date: 

*Justification for course being worthy of full time status must also be submitted.
Course and Curriculum
Course Change Request

Only fill in **changing** information:

<table>
<thead>
<tr>
<th>Year:</th>
<th>Semester:</th>
<th>School/College: AS - College of Arts and Sciences</th>
</tr>
</thead>
</table>

Course: REL 409

Full-time status rationale: This is only required for courses flagged as being equivalent to full-time status.  
Rationale must include why the course is equivalent to full-time credit (12+ credits for undergraduate; 9+ credits for graduate).

Course Requirements:

|--------------------|------------|------------|------------|

<table>
<thead>
<tr>
<th>School Code:</th>
<th>Level Code:</th>
<th>Class Code:</th>
<th>OR; Secondary Class (</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Minimum GPA:</th>
<th>Identifier (1):</th>
<th>Identifier (2):</th>
</tr>
</thead>
</table>

Permission required: No

<table>
<thead>
<tr>
<th>Co-Requisite Course (1):</th>
<th>Section:</th>
<th>Type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisite Course (2):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (3):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (4):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
<tr>
<td>Co-Requisite Course (5):</td>
<td>Section:</td>
<td>Type:</td>
</tr>
</tbody>
</table>
Course and Curriculum
Course Addition Form

Course as you wish it to appear in the Bulletin:

School/College: **ARTS + SCIENCES**  Dept/Course #: **SOC 321**

Effective Date: **FALL 2014**
The date that the course will be active in the system e.g. (the starting date that you will be able to add course sections)

Full Title: **APPLIED HEALTH POLICY**

Abbreviated Title: **HEALTH POLICY**

# of Credits: **3**  Frequency: **EVERY FALL SEMESTER**

Is taken for Credit Only: **N Y**  Full Time Indicator*: **N Y**  Alt Title: **N Y**

Indicates whether the course is flagged as credit only course. If flagged "Y", student receives CR or NC instead of a letter grade.
Indicates whether the course is flagged as full-time credit status. If flagged "N", students who register for the course section will be considered full-time students during the specific term.
The Alternate Title replaces the actual title on the student's transcript.

Prerequisites: **WJO VC**

Identifiers:
(WRITE, HONOR, INTR1, INTR2, INTR3, INTR4, etc.) **W**

Non-Credit: **N Y**  Gen. Ed. Req.: **N Y**  Is this an experimental course: **N Y**

Attach course description when submitting form to your curriculum committee or dean;
when approved please email full course description to scheduling.rg@miami.edu
Use the course number as the subject line of the email.

Dept Contact: **GEORGE PRINOV**  Email address: **PRINOV@HAWAII.EDU**  Phone: **8 - 6161**

Department Chair Signature: **GEORGE PRINOV IN ASHLEY-122**  Date: **1/17/2014**

Academic Dean/Director Signature: .....................  Date: .............

Dean of the Graduate School: .....................  Date: .............

required for graduate courses only

Curriculum Committee Chair: .....................  Date: .............

*Justification of full time status must also be submitted (see supplemental information course addition form).
University of Miami  
Department of Sociology  
College of Arts and Sciences  

SOC 321 Applied Health Policy  

Fall 2014  

Professor: Michael T. French, Ph.D.  
Time: Tuesday and Thursday, 3:30pm-4:45pm  
Classroom: MM 206  
Office: Merrick, Room 121F  
Office Hours: Wednesdays, 2:00pm-4:00pm or by appointment  
Telephone: 305-284-6039  
Fax: 305-284-5310  
Assistant: Ms. Carmen Martinez (305-284-8288)  
E-mail: mfrench@miami.edu  

Prerequisites  

There are no formal prerequisites for this class. However, training and experience in research methods and statistics/econometrics is highly encouraged. Please check with the professor if you have any questions or concerns.  

Course Description  

This course examines the role of public and private institutions in health promotion, health care delivery, and health insurance. We will explore the theoretical and practical reasons for intervention in health-related decisions and health care markets, the related empirical evidence, and the effects of these interventions on health outcomes and social welfare. Students will understand how and why government and society in general attempts to influence health-related behaviors and health insurance markets, and the resulting effects on individuals’ choices, expenditures, health outcomes, and overall quality of life.  

Textbook  

There is no required textbook for this course. The required readings are all journal articles, which are available on the journals’ websites and are accessible for no charge through the University of Miami library (search for the journal name at http://library.miami.edu/articles/ and then find the article within the journal database), or working papers available at www.nber.org. These articles are also commonly available through an online search engine if accessed through University of Miami’s network.  

Some of the topics will be introduced using selected material from: Health Policy Issues: An Economic Perspective, by Paul J. Feldstein, Health Administration Press, Fifth Edition, 2011. This text is not required for the course, but copies will be available for your access in the reserve room of Richter Library if you are interested in additional background reading.
Course Outline

Students should complete all required readings prior to class and come prepared to discuss/debate the readings and ask questions about the material. Repeated observations that you have not completed the readings and prepared for class properly will result in a lower class participation grade. The syllabus is not a fixed document and is subject to revisions. Health policy is a dynamic and fluid area so I will incorporate new topics and related articles when timely and appropriate.

Guide for the structure of class each week: We will typically discuss one broad topic per week. On Tuesday, I will briefly introduce the topic and then we will discuss/debate the first assigned reading. On Thursday, we will discuss/debate the second assigned reading and related current events. For the discussion of current events, each student will find at least one news article related to the topic of the week and two students will be randomly selected to lead the class discussion emphasizing how their articles relate to the policy concepts discussed that week. Keep in mind that this is a rough outline for each class and it is subject to change depending on the material and discussion.

Week 1: 1/14 & 1/16

Course Overview & Summary of Health Care Markets, Health Insurance, and Policy Analysis

Week 2: 1/21 & 1/23

Environmental Quality and Health
Beatty and Shimshack (2011)
Curris, Zivin, et al. (2013)
Muller and Mendelsohn (2009)
Currie, Neidell, and Schmieder (2009)

Week 3: 1/28 & 1/30

Tobacco Consumption
Farrelly, et al. (2013)
Carpenter and Cook (2008)
Adda and Cornaglia (2006)
Baum (2009)
Markowitz (2008)
Sabbane, Lowrey, and Chebat (2009)
Obtain and review UM’s smoking policies

Week 4: 2/4 & 2/6

Substance Use and Mental Health
Pоповић and French (2013)
Ceson, Sabia, and Tekin (2013)
Carpenter and Dobkin (2009)
Cook and Durance (2013)
Lovenheim and Slemrod (2010)
Yoruk and Yoruk (2011)

Week 5: 2/11 & 2/13

Body Weight, Exercise, and Nutrition
Fletcher, Frisvold, and Tefli (2010)
French, Popović, and Maclean (2009)
Bollinger, Leslie, and Sorensen (2011)
Cawley, Frisvold, and Meyerhoefer (2013)
Week 6: 2/18 & 2/20  
**Texting and Drunk Driving**
*Abouk and Adams (2013)*  
*French and Gavus (2014)*  
*Bhargava and Pathania (2013)*  
*Dills (2010)*  
*Lim and Chi (2013)*

Week 7: 2/25 & 2/27  
**Seat Belts and Bicycle/Motorcycle Helmets**
*Chorba, Reinsfurth, and Halke (1988)*  
*French, Gavus, and Homer (2009)*  
*Carpenter and Stehr (2011)*  
*Doyle and Levitt (2010)*  
*Dec (2009)*

Week 8: 3/4 & 3/6  
**Health Care, Health Policy, and Crime**
*Donohue and Levitt (2001)*  
*Cereia, McReynolds, and Wasser (2006)*  
*Bilger and Carrieri (2013)*  
*Foote and Goetz (2008)*  
*Paper topic due on 3/6*

Week 9: 3/11 & 3/13  
Spring Break

Week 10: 3/18 & 3/20  
**Health Insurance, Public Coverage, and the ACA**
*Gruber (2008)*  
*Aron-Dine et al. (2013)*  
*Antwi, Motiya, and Simon (2013)*  
*Manning et al. (1987)*  
*Aizumi (2008)*  
*Dave and Kaestner (2009)*  
*Mid-Term Exam on 3/20*

Week 11: 3/25 & 3/27  
**Health Care Costs and Technology**
*Cutler and McClellan (2001)*  
*Chandra and Skinner (2012)*  
*Civan and Koksal (2010)*  
*Bates and Santerre (2013)*

Week 12: 4/1 & 4/3  
**Expansions of Public Insurance**
*Finkelstein and McKnight (2008)*  
*Anderson et al. (2012)*  
*Garthwaite (2012)*  
*Finkelstein et al. (2012)*  
*Weathers and Stegman (2012)*  
*Lo Sasso and Buchmueller (2004)*
Week 13:  4/8 & 4/10  Pre-ACA Reforms
Kolstad and Kowalski (2010)
Graves and Gruber (2012)
Buchmueller, DiNardo, and Valletta (2011)
Miller (2012)
Long et al. (2011)

Week 14:  4/15 & 4/17  Medicaid and Medicare
Joyce, Zissimopoulos, and Goldman (2013)
Freidt and Carroll (2013)
Shen and Wu (2013)
Hahn (2013)
Cantor, Thompson, and Farnham (2013)
Paper draft due on 4/15

Week 15:  4/22 & 4/24  Emerging Health Policy Topics
TBD

Full References for All Articles


involving young drivers?" Transport Policy, 27:158-163.

Course Requirements and Grading

Determination of grades:
Final Report 35%
Mid-Term Exam 20%
Class Participation, Debate Performance, and News Articles (Current Events) 25%
Short Policy Papers 20%

Final Report: The final report will be due at the beginning of the final exam period and no later than 11:00am on Wednesday, April 30th. This comprehensive report will be an analysis of a health care policy of your choice that is related to risky health behaviors, welfare-enhancing health behaviors, health care choices, or health insurance. The report should be 10 double-spaced pages, not including title page, references (Chicago Style preferred;
http://www.chicagomanualofstyle.org/tools_citationguide.html), tables, or figures. Late reports will not be accepted. A one-page single-spaced proposal of your report topic will be due no later than the beginning of class on March 4th. Late proposals will decrease your final report grade and will not be accepted after March 18th. A complete draft of your report will be due by the beginning of class on April 15th. The draft will not be graded, but comments will be provided to enhance the final product. Comments will not be provided on late drafts. The final version of your report must be a revision of this draft that incorporates the feedback received from the professor. Final reports must be well written, well organized, and free of grammatical mistakes and typos. Students should rely on journal articles, textbooks, newspaper/magazine articles, and other reference materials, but no assistance is permitted from classmates, instructors, friends, etc. In addition, students are encouraged to utilize the Writing Center and submit their draft reports through SafeAssign, which will detect possible plagiarism. Final reports will be submitted to me through Blackboard via SafeAssign to ensure that any previous issues are resolved.

Mid-Term Exam: The mid-term exam will occur on March 20th. If you miss the mid-term exam due to emergency circumstances, you will be accommodated if I deem the reason valid (e.g., significant illness, accident, family emergency, participation in an athletic event, etc.). Depending on the circumstances, accommodation may be in the form of waiving the requirement or a makeup exam. Zero points will be awarded otherwise.

Participation in Class Discussions/Debate Performance/News Articles (Current Events): Students are expected to attend every class, read the assigned articles prior to class, and come prepared to discuss/debate the readings. The participation grade for students who miss classes and/or come to class unprepared will be marked down accordingly. Class discussion of specific articles will focus on: what is the research question(s); why the research question(s) is important; why the research question(s) is difficult to answer; how the authors attempt to answer the question(s); what are the results; and what are the implications of the results for health policy.

For the second half of class on most Thursdays, students will describe current events related to the topic of the week. These impromptu presentations will begin during the second week of class. The news articles must be related to the topic of the week, and must have been published within the prior three months in a major media outlet (e.g., The New York Times, The Washington Post, The Economist, Business Week, Huffington Post, etc.). Two students each week will be randomly selected to briefly summarize their articles and lead a short discussion emphasizing how the article relates to the health policy concepts being discussed that week.

Please note that the grading for class participation, debate performance, and news articles (current events) are all lumped into one category, which is worth 25% of your final grade. Performance in all three areas matters and poor performance in even a single area can significantly drop your overall grade. Students who fail to fulfill the minimum requirements of any one of the three parts will receive a score of 0 for this portion of their final grade. Please come to class prepared, professionally engage your classmates, demonstrate your understanding of the topics through the news articles, and provide interesting insight with your presentations.

Short Policy Papers: As preparation for each class and to facilitate class discussion/debate, students are expected to write a short (< 500 words) summary of each article before class that includes a succinct response to each of the class discussion questions listed above, states any questions or concerns about the reading material, and lists one question you would like the class to discuss.
These short policy papers will be collected multiple times throughout the semester and represent an opportunity for less vocal students to demonstrate their comprehension of the material. In addition to the written summaries of articles, all students are still expected to actively participate in classroom discussions and come prepared with related news articles (current events).

**Attendance Policy**

Students are expected to arrive in the classroom at least 5 minutes before the start of each class and to attend all sessions. Unexcused late arrivals or absences will result in a lower final grade. Unavoidable absences (medical emergencies, family emergencies, athletic events, etc.) should be confirmed with the professor no later than one day prior to the class time. All cell phones, computers, and other electronic devices must be TURNED OFF during class time. Emailing, texting, Faceooking, tweeting, electronic surfing, and other forms of non-classroom communication are strictly forbidden. Each student is entitled to one warning and thereafter will be excused from the class that day.

**Honor Code**

I expect you to abide by the University of Miami Undergraduate Honor Code or the Graduate Honor Code, whichever applies. You can find these Codes on the internet (http://www6.miami.edu/clean-students/pdf/undergrad_honorcode.pdf; http://www6.miami.edu/clean-students/pdf/graduate_honorcode.pdf).

**Testing Accommodations**

Anyone using the testing services of the Office of Disability Services (http://www.miami.edu/index.php/academic_resource_center/disability_services/) must schedule appointments at least 1 week prior to the exam, and preferably earlier. The spaces fill up quickly.

**Brief Professor Bio**

Dr. French (www.mtfrench.com) is a health economist and Professor in the Department of Sociology at the University of Miami, with secondary appointments in the Department of Economics and Department of Public Health Sciences. He is also Director of the Health Economics Research Group (www.miami.edu/herg) in the College of Arts and Sciences, Research Director of the Health Sector Management and Policy Program in the School of Business Administration (http://www.bus.miami.edu/undergraduate-programs/curriculum/majors/health-sector/index.html), and a Senior Fellow of the Center for Health Sector Management and Policy (http://www.bus.miami.edu/explore-the-school/health-programs/health-center/). His research interests and experience includes health economics, health policy, program evaluation, substance abuse research, alternative health care delivery systems, pharmaco-economics, human resource economics, and the economics of crime. He has been principal investigator or project leader on numerous research grants with the National Institutes of Health, the Robert Wood Johnson Foundation, and several state agencies. He is currently on the editorial boards for *Health Services Research, Journal of Mental Health Policy and Economics, Evaluation and Program Planning, and Journal of Substance Abuse Treatment* and serves on several research advisory boards for universities, national and international companies, government agencies, and health care organizations. Dr. French has published over 160 peer-reviewed scholarly articles in a variety of multidisciplinary professional
Course Description for SOC 321

Examines role of public and private institutions in health promotion, health care delivery, and health insurance. Explains how and why government and society attempt to influence health-related behaviors and the resulting effects on individuals’ lives.