INFO I101

Introduction to Informatics

Department of Human-Centered Computing

Indiana University School of Informatics and Computing

IUPUI

Semester: Summer I, 2020

Section Number: 12365

Credit Hours: Four credit hours

Course Web Site: http://canvas.iu.edu

Online:

- The class does not meet on a specific day; rather, it is delivered asynchronously using interactive pdf files and videos.
- The lab sessions will be available both synchronously and asynchronously (every week, each student can choose to either connect via Zoom with the instructor, or to watch a video that guides her/him through the lab activities).
- There are plenty of opportunities for asynchronous discussion with classmates and instructor (we will use VoiceThread).

Instructor: Francesco Cafaro

Email Address: fcafar@iu.edu

Course Description

Problem solving with information technology; introductions to information representation, relational databases, system design, propositional logic, cutting edge technologies; CPU, operating systems, networks; laboratory emphasizing information technology including web page design, word processing, databases, using tools available on campus.

Prerequisites: There are no prerequisites for this course.
A statement about COVID-19 and this class

This section of I-101 was already meant to be offered online during Summer 2020, so the COVID-19 emergency did not impact the class schedule. I understand, however, that the current health emergency can be challenging for many. If there are specific situations that arise from COVID-19 and that impact your work in this class, let me know as soon as possible, so that we can identify alternative assignments or deadlines.

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Contact Information

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Francesco Cafaro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Francesco Cafaro</td>
</tr>
<tr>
<td>e-mail</td>
<td><a href="mailto:fcafaro@iu.edu">fcafaro@iu.edu</a></td>
</tr>
<tr>
<td>Office hours</td>
<td>By appointment (on Zoom)</td>
</tr>
</tbody>
</table>

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Required Online Resource

Through this course, you will read and present extracts from the chapters of this online book:

*The Encyclopedia of Human-Computer Interaction*, 2nd Ed.

The book is freely available online at:


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Recommended (but not required) Textbooks

1) Jon Duckett, *HTML and CSS: Design and Build Websites*, Paperback


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Software

IUPUI students can freely download the software that we use in this class (Adobe Creative Cloud) at:

https://iuware.iu.edu

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Remote Collaboration Tools

Zoom: [https://uits.iu.edu/zoom](https://uits.iu.edu/zoom)
Box: [https://uits.iu.edu/box](https://uits.iu.edu/box)
VoiceThread: on Canvas

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Prototypes/Wireframes

Axure: [https://www.axure.com/edu](https://www.axure.com/edu)

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**LEARNING OBJECTIVES**

By the end of the semester, you will be able to design websites on the basis of the users' requirements; create webpages using HTML and CSS; write statements in Javascript -including defining variables and using Javascript constructs; use object-oriented programming languages; explain what is a script and how to create one; store and access data; visualize data sets; and, explain introductory concepts of Human-Computer Interaction.

<table>
<thead>
<tr>
<th></th>
<th>PLO</th>
<th>PLUS</th>
<th>RBT</th>
<th>PUL</th>
<th>SC</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Define hypertext and webpages terms.</td>
<td>A1</td>
<td>P1.4</td>
<td>1</td>
<td>3</td>
<td>4.3</td>
<td>• Topic and Project Presentation and Discussions</td>
</tr>
<tr>
<td>2. Script webpages using HTML5 tags, attributes, and elements.</td>
<td>B3</td>
<td>P3.2</td>
<td>6</td>
<td>1B, 2</td>
<td>4.3</td>
<td>• Lab Assignments 1-2 • Project</td>
</tr>
<tr>
<td>3. Use cascading style sheet (CSS) to specify the presentation of a webpage.</td>
<td>B3, C3</td>
<td>P1.4, P3.2</td>
<td>3</td>
<td>1B, 2</td>
<td>4.3</td>
<td>• Lab Assignments 3 • Project</td>
</tr>
<tr>
<td>4. Transfer files to a server so that webpages can be accessed on the Internet.</td>
<td>A1</td>
<td>P1.4</td>
<td>3</td>
<td>3</td>
<td>4.3</td>
<td>• Project</td>
</tr>
<tr>
<td>5. Design and explain basic algorithms</td>
<td>B2, B3, D2</td>
<td>P1.1, P1.4, P3.2</td>
<td>1</td>
<td>3</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
<td>• Lab Assignments 1-5</td>
</tr>
<tr>
<td></td>
<td>6. Define variables and construct statements JavaScript.</td>
<td>B3</td>
<td>P3.2</td>
<td>1</td>
<td>1B</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
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<tr>
<td></td>
<td>7. Write expressions using arithmetic, relational, and logical operators.</td>
<td>A2, B3</td>
<td>P2.3, P3.2</td>
<td>6</td>
<td>1B</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>8. Compose conditional and compound statements.</td>
<td>A2, B3</td>
<td>P2.3, P3.2</td>
<td>6</td>
<td>1B</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>9. Create JavaScript functions with correct syntax and semantics.</td>
<td>B3</td>
<td>P3.2</td>
<td>6</td>
<td>1B</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>10. Understand concepts in statistics at an introductory level (including descriptive statistics, inference, probability, and regression analysis) and use them to evaluate user interfaces.</td>
<td>A2, A3, A4, E2</td>
<td>P1.4, P2.3, P4.4</td>
<td>2</td>
<td>1B</td>
<td>3.1, 3.2, 3.3, 3.4, 4.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>11. Place data in a spreadsheet and correctly format a table</td>
<td>A4</td>
<td>P1.4</td>
<td>3</td>
<td>3</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>12. Apply functions in spreadsheets to manipulate data and create meaningful charts</td>
<td>A4, C3</td>
<td>P1.4, P3.2</td>
<td>3</td>
<td>1B, 2</td>
<td>1.3, 3.1, 3.2, 4.3, 4.4</td>
</tr>
<tr>
<td></td>
<td>13. Discuss current topics in Informatics and Human-Computer Interaction</td>
<td>E2</td>
<td>P4.4</td>
<td>2</td>
<td>2–6</td>
<td>1.3, 4.6</td>
</tr>
</tbody>
</table>
14. Use concepts in human-computer interaction and user experience to design and evaluate a website

<table>
<thead>
<tr>
<th>Topic and Project</th>
<th>P1.1, P1.4, P4.2, P4.4</th>
<th>4, 5</th>
<th>2, 3</th>
<th>1.3, 4.3, 4.4, 4.6</th>
</tr>
</thead>
</table>

RBT: Revised Bloom’s Taxonomy;
PUL: Principle of Undergraduate Learning
SC: Statewide Competency Domain and Learning Outcome
PLO: Program Level Learning Outcome. In this class, the level of learning is Introductory (I) for all the listed PLOs
PLUS: Profiles of Learning for Undergraduate Success.

Course-Relevant Statewide Competency Domain and Learning Outcome

1. Written Communication
   1.3. Read critically, summarize, apply, analyze, and synthesize information and concepts in written and visual texts as the basis for developing original ideas and claims.
   1.4. Demonstrate an understanding of writing assignments as a series of tasks including identifying and evaluating useful and reliable outside sources.
   1.5. Develop, assert and support a focused thesis with appropriate reasoning and adequate evidence.
   1.7. Demonstrate proficiency in reading, evaluating, analyzing, and using material collected from electronic sources (such as visual, electronic, library databases, Internet sources, other official databases, federal government databases, reputable blogs, wikis, etc.).

2. Speaking and Listening
   2.1. Use appropriate organization or logical sequencing to deliver an oral message.

3. Quantitative Reasoning
   3.1. Interpret information that has been presented in mathematical form (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures).
   3.2. Represent information/data in mathematical form as appropriate (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures).
   3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.
   3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.

4. Scientific Ways of Knowing
   4.2 Distinguish between scientific and non-scientific evidence and explanations.
   4.3 Apply foundational knowledge and discipline-specific concepts to address issues or solve problems.
   4.4 Apply basic observational, quantitative, or technological methods to gather data and generate evidence-based conclusions.
4.6 Locate reliable sources of scientific evidence to construct arguments related to real world issues.

**Principles of Undergraduate Learning (PULs)**

This course is designed to demonstrate IUPUI's principles of undergraduate learning (PULs).

1A. Core communication: written, oral and visual skills  
1B. Core communication: quantitative skills  
1C. Core communication: information resources skills  
2. Critical thinking  
3. Integration and application of knowledge  
4. Intellectual depth, breadth, and adaptiveness  
5. Understanding society and culture  
6. Values and ethics

**Program-level Learning Outcomes (PLO)**

The following are the PLOs relevant to this course. Because this is an introductory class, we expect an introductory (I) level of knowledge for all the course PLOs.

**A. Foundations of Informatics and Computing**

A1. Explain the fundamentals of computer hardware and software  
A2. Apply knowledge and skills of logic and discrete mathematics  
A3. Explain the concepts of statistics and probability  
A4. Describe data and information representation

**B. Problem Solving and Critical Thinking**

B2. Explain programming concepts of procedural and object-oriented programming  
B3. Create computer programs in one or more programming language

**C. Data Studies and Analytics**

C3. Create effective visualizations to analyze and communicate data

**D. Analysis and Design of Information Systems**

D2. Develop user requirements

**E. Social Dynamics of Informatics and Information Technology**

E2. Interpret major societal trends affecting the development and deployment of technology, such as access, privacy, intellectual property, security, and equity

**F. Professional Skills and Ethics**

F3. Interpret constructive feedback  
F6. Work collaboratively as part of a team

Please visit https://soic.iupui.edu/undergraduate/degrees/informatics/learning-outcomes/ to view the complete list of the program-level learning outcomes for B.S. in Informatics.

**IUPUI Profiles of Learning for Undergraduate Success (PLUS)**

The following are the relevant profiles for this course:

**P1.1 Communicator** – Evaluates information
P1.4 **Communicator** – Conveys ideas effectively

P2.3 **Problem Solver** – Analyzes, synthesizes, and evaluates

P3.2 **Innovator** – Creates/designs

P4.2 **Community Contributor** – Respectfully Engages Own and Other Cultures*

P4.4 **Community Contributor** – Anticipates consequences

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**SCHEDULE**

(Important: The dates are suggestions on how to organize your weekly work, but this class is delivered asynchronously)

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Topics and Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tue May 12, 2020</td>
<td>Class</td>
<td>FIRST DAY OF CLASSES - SUMMER I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduction to the Course</td>
</tr>
<tr>
<td>Wed May 20, 2020</td>
<td>Lab</td>
<td>[LAB] HTML Lab 2</td>
</tr>
<tr>
<td>Mon May 25, 2020</td>
<td></td>
<td>MEMORIAL DAY</td>
</tr>
<tr>
<td>Wed May 27, 2020</td>
<td>Lab</td>
<td>[LAB] CSS Lab</td>
</tr>
<tr>
<td>Tue June 2, 2020</td>
<td>Class</td>
<td>[JAVASCRIPT] Decisions and Loops.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[JAVASCRIPT] Introduction to Javascript. Basic Javascript</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instructions. Decisions and Loops.</td>
</tr>
<tr>
<td>Wed June 3, 2020</td>
<td>Lab</td>
<td>[LAB] JS Lab 1</td>
</tr>
<tr>
<td>Tue Jun 9, 2020</td>
<td>Class</td>
<td>[JAVASCRIPT] Functions. Events.</td>
</tr>
<tr>
<td>Wed Jun 10, 2020</td>
<td>Lab</td>
<td>[LAB] JS Lab 2</td>
</tr>
<tr>
<td>Tue Jun 16, 2020</td>
<td>Class</td>
<td>[HCI] Designing for Human-Computer Interaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[HCI] Introduction to Statistics for HCI. Conducting User</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Studies.</td>
</tr>
<tr>
<td>Tue Jun 23, 2020</td>
<td>Class</td>
<td>LAST DAY OF CLASSES - SUMMER I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[PROJECT] Final Presentations</td>
</tr>
</tbody>
</table>
**READING LIST (TOPIC PRESENTATIONS)**

During the summer, you will prepare (individually or in pairs) a short presentation for one of these book chapters, and deliver it online (in an asynchronous way) using VoiceThread. During the first week of class, you can choose the book chapter that you want to present.

- Chapter 2. Human-Computer Interaction, a brief intro.
- Chapter 3. User Experience and Experience Design.
- Chapter 15. Usability Evaluation.
- Chapter 5. Visual Representation.
- Chapter 35. Data Visualization for Human Perception.
- Chapter 42. Design for All.


**GRADES**

**Weekly Labs (38 points)**

- HTML Lab 1 (6 points)
- HTML Lab 2 (8 points)
- CSS Lab (8 points)
- JavaScript Lab 1 (8 points)
- JavaScript Lab 2 (8 points)

**Project (50 points)**

- Individual Project Idea (5 points)
- Weekly Report #1 (5 points)
- Weekly Report #2 (5 points)
- Initial Presentation (10 points)
- Weekly Report #3 (5 points)
- User Study Report (5 points)
- Final Presentation (15 points)

**Online Participation (12 points)**

- Present Yourself to the Class (2 points)
- Group Formation (1 point)
- Book chapter presentation (6 points)
- Online (VoiceThread) Participation (3 points)

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Grading

Grades will be assigned using the IUPUI grading scale: [http://registrar.iupui.edu/gradecover.html](http://registrar.iupui.edu/gradecover.html)

You will receive a score (**points**) for each graded assignment or group work. The sum of all points that you can receive during the semester is 100. In order to compute your final grade, you can simply add up all the points that you received during the semester, and convert your score to a letter grade using the table below.

<table>
<thead>
<tr>
<th>Letter grade</th>
<th>Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>&gt;=99</td>
<td>Professional Level Work; Highly Contributed to the Learning Environment and Autonomously Explored Extra-Curricular Areas of Informatics</td>
</tr>
<tr>
<td>A</td>
<td>&gt;=93</td>
<td>Excellent Work</td>
</tr>
<tr>
<td>A-</td>
<td>&gt;=90</td>
<td>Very Good Work</td>
</tr>
<tr>
<td>B+</td>
<td>&gt;=87</td>
<td>Good Work</td>
</tr>
<tr>
<td>B</td>
<td>&gt;=83</td>
<td>Acceptable Work, Average</td>
</tr>
<tr>
<td>B-</td>
<td>&gt;=80</td>
<td>Acceptable Work, below Average</td>
</tr>
<tr>
<td>C+</td>
<td>&gt;=77</td>
<td>Poor Work</td>
</tr>
<tr>
<td>C</td>
<td>&gt;=73</td>
<td>Poor Work, Minimally Acceptable</td>
</tr>
<tr>
<td>C-</td>
<td>&gt;=70</td>
<td>Unacceptable Work</td>
</tr>
<tr>
<td>D+</td>
<td>&gt;=67</td>
<td>Unacceptable Work</td>
</tr>
<tr>
<td>D</td>
<td>&gt;=63</td>
<td>Unacceptable Work</td>
</tr>
<tr>
<td>D-</td>
<td>&gt;=60</td>
<td>Unacceptable Work</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60</td>
<td>Failed</td>
</tr>
</tbody>
</table>

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Online (VoiceThread) Participation

Because a significant part of this class relies on topic and project presentations, most of the learning that will occur during those sessions depends on the quality of your contribution to the discussion. Make sure to contribute at most to all the asynchronous online discussions, because you will receive a participation grade at the end of the semester. Specifically, your participation will be assessed according to this rubric:

- **A** (3pts): Very Good Contribution, contributed to most discussions in a meaningful way, sometimes with extra-curricular information based on additional literature and/or professional experience.
- **B** (2.55pts - 85%): Good contribution, contributed to most discussions in a meaningful way, but never with extra-curricular information based on additional literature and/or professional experience.
- **C** (2.25pts - 75%): Could be better, contributed to the discussions sporadically or in a marginal way.
• D (1.95pts - 65%): Needs improvement, the contribution was sometimes off-topic and/or inconsistent.
• F (between 1.5 and 0pts): Failed to contribute in a meaningful way or did not contribute at all.

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Disruptive Behavior

The class is a professional environment, and you are expected to behave as professionally as you would in a company meeting, even if this class is entirely online. Do not be disruptive to the class activities, and use the highest degree of professionalism when sharing materials on VoiceThread. Remember, you are expected to contribute to activities and discussion!

Recurrent cases of disruptive behavior will be reported to campus.

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Late Assignments

Class policy: Assignments are due at 11:59 pm on the submission deadline (unless otherwise specified). If you submit an assignment between 1 minute and 24 hours after the deadline, the penalty is 20% of the score. If you submit more than 24 hours after the submission deadline, Canvas will not accept it, and the assignment will count 0% towards your final score.

Exceptions from this class policy may be considered, exclusively during this summer semester, on an individual basis and at the instructor sole discretion, because of the current situation with COVID-19.

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Anti-Plagiarism Checks

We will cross-check each assignment you submit looking for plagiarism. The solution that you submit must be your own! It is *not* ok to copy and paste code or text from online resources. It is acceptable to discuss your ideas with one or more of your classmates (in which case, make sure to add a text file with their name and a description of what you discussed to your submission). It is *not* acceptable, however, that multiple people submit exactly the same code/text file.

Please refer to the campus policy on academic integrity (reported below) for further information on what can happen if you plagiarize your classmates' work or external resources.

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Technology Support, and Laptop Policy
For general IT information and support, see: https://soic.iupui.edu/technology/

Students at the School of Informatics and Computing are required to have a personal laptop computer available for use in class. Students who already own laptops are welcome to use them in class provided the laptop has the minimum memory and operating standards required for the software used in the course. For the technical specifications needed for the personal laptop, see: HTTPS://SOIC.IUPUI.EDU/TECHNOLOGY/LAPTOP/

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UNIVERSITY POLICIES

Campus policies governing IUPUI courses may be found at: http://registrar.iupui.edu/course_policies.html

Administrative Withdrawal
A basic requirement of this course is that you will participate in all class activities and conscientiously complete all required course activities and/or assignments. If you miss more than half of the required activities within the first 25% of the course, you may be administratively withdrawn from this course.

Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and if you are administratively withdrawn from the course you will not be eligible for a tuition refund. If you have questions about the administrative withdrawal policy at any point during the semester, please contact the instructor or visit http://registrar.iupui.edu/withdrawal-policy.html.

Important Supplement for IUPUI Syllabi

IUPUI Policy on Disability Accommodations
Students needing accommodations because of disability will need to register with Adaptive Educational Services and complete the appropriate forms issued by AES before accommodations will be given. The AES office is located in Taylor Hall, UC 100. You can also reach the office by calling 274-3241.

IUPUI Policy on Religious Holidays
IUPUI respects the right of all students to observe their religious holidays and will make reasonable accommodation, upon request, for such observances. Students seeking accommodation for religious observances must submit a request in writing to the course instructor by the end of the second week of the semester and should use the Request for Course Accommodation Due to Religious Observance Form. More information on the IUPUI Policy on Religious Holidays is available here: http://registrar.iupui.edu/religious.html.

IUPUI Policy on Academic Integrity:
The IU Code of Student Rights, Responsibilities, and Conduct states that students must uphold and maintain academic and professional honesty and integrity; the code defines academic misconduct as any activity that tends to undermine the academic integrity of the institution. Students engaging in academic misconduct may therefore receive penalties from their course instructor and disciplinary action from the university. Policies against academic misconduct apply to all course-, department-,
school-, and university-related activities. Academic misconduct may involve human, hard-copy, or electronic resources and includes but is not limited to the following: cheating, fabrication, plagiarism, interference, violation of course rules, and facilitating academic dishonesty. For definitions of these activities, visit [http://studentcode.iu.edu/responsibilities/academic-misconduct.html](http://studentcode.iu.edu/responsibilities/academic-misconduct.html). For information on how faculty and students are expected to handle cases involving academic misconduct, visit [http://registrar.iupui.edu/misconduct.html](http://registrar.iupui.edu/misconduct.html). Additional information about the rights and responsibilities of IU students is available at [http://studentcode.iu.edu/](http://studentcode.iu.edu/).

**Title IX - IUPUI Policy on Sexual Misconduct**
As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help. If you are seeking help and would like to speak to someone confidentially, please visit [http://stopsexualviolence.iu.edu/help/index.html](http://stopsexualviolence.iu.edu/help/index.html) (Links to an external site.) for contact information.

It is also important that you know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus’ Deputy Title IX Coordinator or IU’s Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed.

Protecting a student’s privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist.

I encourage you to visit [stopsexualviolence.iu.edu](http://stopsexualviolence.iu.edu) (Links to an external site.) to learn more about available resources on campus and in the community.

**Education and Title VI**
Title VI of the Civil Rights Act of 1964 protects people from discrimination based on race, color or national origin in programs or activities that receive Federal financial assistance.

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**RESOURCES FOR STUDENTS**

**Student Advocate**
The Student Advocate Office is located in the Campus Center, Suite 350, and can be contacted by phone at 278-7594 or email at stuadvoc@iupui.edu. For more information, visit the Student Advocate website at [http://www.life.iupui.edu/advocate/](http://www.life.iupui.edu/advocate/)

**Adaptive Educational Services**
Students needing accommodations because of physical or learning disabilities should contact Adaptive Educational Services, Taylor Hall (UC), Room 137: [http://aes.iupui.edu/](http://aes.iupui.edu/)

**Counseling & Psychological Services**
Students who wish to seek counseling or other psychological services should contact the CAPS office by phone at 274-2548 or email at capsindy@iupui.edu. For more information, visit the CAPS website at [http://life.iupui.edu/caps/](http://life.iupui.edu/caps/)

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The Instructor reserves the right to make changes to the syllabus and course schedule, if necessary.