College of Hospitality and Technology Leadership

COP3515
IT Program Design  
(with UML)

Spring 2015
3 Credit Hours
<table>
<thead>
<tr>
<th>Course Number:</th>
<th>COP3515</th>
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| Classroom:    | Virtual Classroom & Face-to-face at school  
               Meets every Monday/Wednesday 2:00 pm – 3:30 pm via Blackboard Collaborate.  
               Please note:  
               - Because of classroom availability issues, we will meet online on Mondays (2-3:30pm), and face-to-face on Wednesdays (2-2:50) in room A221 on campus at USFSM.  
               Students who have commuting issues or school/work conflicts, can still attend online synchronously, or asynchronously as each session is recorded for later viewing. |
| Course Name:  | IT Program Design |
| Learning Outcome: | Concepts associated with the design and implementation of computer programs are studied, with emphasis on creation of object-oriented programs to be developed and maintained in a variety of environments from small to large information technology organizations. Students will learn and use the UML design language – the course has been extended to develop this expertise. |
| Instructor:   | Dr. Sunita Lodwig |
| Office:       | A317  
e-mail: slodwig@sar.usf.edu  
Phone: 941-966-1260 |
| Office Hours: | - By appointment! We can meet face-to-face at school in my office, or we can meet in my virtual office via Skype or Blackboard Collaborate.  
- Face-to-face group discussions will be scheduled on campus periodically.  
- **Best way to contact me is via email. Course-related email should be sent from CANVAS only. I receive close to a 100 messages a day, and it is very easy for important emails to get buried. Email from CANVAS is flagged by Course Number and is easier to spot and respond to.**  
- In case you need to reach me very quickly, my home phone number is 941-966-1260. |
**Publisher: McGraw-Hill**  
This text will be used extensively in this course; it will be a practical necessity for students to obtain and use it. |
- *Schaum’s Outline of UML* (Schaum’s Outlines) (Paperback) by Simon Bennett, John Skelton, Ken Lunn  
- *Schaum’s Outline of Software Engineering* |
Prerequisites: Working knowledge of Object-Oriented Programming.

Attendance Policy: Mandatory attendance:
- The Final exam will not be available online – it will need to be taken in person as a proctored test!
- Every student is also expected to attend the IT MATTERS invited speaker talks – sufficient notice will be given when these seminars are scheduled.
- Penalty for not attending the IT MATTERS event could have a 10% impact on the final grade.

With the above exceptions, class attendance is optional. However, the course moves through the material at a rapid pace, and each topic builds on the ones that preceded it. Catching up is difficult, and attempting to “cram” the material will surely lead to failure to adequately grasp it. Students are strongly encouraged to attend the live sessions.

As a result, students are responsible for their class attendance, online or offline, and are strongly advised that falling behind will affect their grades (see Performance Evaluation and Grading).

Performance Evaluation and Grading:
Student performance will be evaluated based on class participation (either in-class or via the Discussion Board on CANVAS), two exams, and assignments. Late assignments will be accepted but only up to a point. Once an assignment has been discussed in class, it will no longer be accepted. Also, please note, late assignments will be penalized by a loss of 5 points (could be as much as 25% of the grade).

The relative weights for each of these components in determining the final grade are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Team Project</td>
<td>30%</td>
</tr>
<tr>
<td>2 Tests (mid-term &amp; Final)</td>
<td>30%</td>
</tr>
<tr>
<td>In-class and online participation</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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A grade will be determined based on the total of possible points earned, as follows: A 90-100; B 80-89; C 70-79; D 60-69; F 0-59. More granularity with +s and −s will also be part of the final grade.

Important Date: Last day to Withdraw from Course: March ??

COURSE OBJECTIVES

The goals for this course are:
- To attain a thorough understanding of the object-oriented paradigm and its application to object-oriented systems analysis and design.
- To understand and apply the Unified Process methodology of object-oriented systems analysis and design, including the workflow stages and the artifacts to be produced.
To apply the Unified Modeling Language (UML) CASE tool to a few case study scenarios and produce the design artifacts required by the methodology. Students will perform several assignments using UML in a wide range of applications.

To implement (prototype) the system designed in a suitable object-oriented programming language.

On completing this course, each student should be able to:

- Compare and contrast the object-oriented paradigm with the traditional view of systems analysis and design.
- Identify and describe the workflow steps for requirements determination, object-oriented analysis, and object-oriented design.
- Explain the role of teams in the analysis, design and implementation processes.
- Identify and describe the various stages of testing during object-oriented analysis, design, and implementation.
- Explain the importance of the maintenance phase of the O-O life cycle, and how this is made easier by application of the methodology and tools learned throughout this course.
- Explain the need for suitable interface design in O-O systems.

### COURSE DESCRIPTION AND SCHEDULE

<table>
<thead>
<tr>
<th>Week #</th>
<th>Topic</th>
<th>Chapter #</th>
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It is very important each student read this article and also follow some of the links for greater clarity and understanding – it gives a good overview of UML. We will discuss this intro in class. |           |
| **Introduction to Software Engineering** | Week 1 – Jan 4  
Introduction – review syllabus and IBM article on UML Intro Strengths of the objected-oriented paradigm  
|              | Week 2 – Jan 11  
Iterative-and-incremental life-cycle model, and other models | 2         |
| **UML and the Unified Process** | Week 3 – Jan 18  
**Martin Luther King, Jr. Day – Jan 19th – no class**  
Software Process – Workflows and Unified Process Discussion on StarUML | 3         |
|              | Week 4– Jan 25  
From Modules to Objects | 7         |
|              | Week 5 – Feb 1  
Requirements workflow | 11        |
|              | Week6,7–Feb8,15  
Object-Oriented Analysis | 13        |
|              | Week 8 – Feb 22  
Design Workflow | 14        |
|              | Week 9 – Mar 1  
**MID_TERM** |           |
|              | **Spring Break (week of March 8th)** |           |
| **Major Topics in Systems Analysis, Design, Implementation, Maintenance** | Week 10 – Mar 15  
More on UML | 17        |
|              | **March xxxx**  
Last day to Withdraw from Course |           |
<table>
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<tr>
<th>Week 11 – Mar 222</th>
<th>CASE Tools</th>
<th>5</th>
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<tbody>
<tr>
<td>Week 12 – Mar 29</td>
<td>Implementation</td>
<td>15</td>
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<tr>
<td>Week 13 – Apr 5</td>
<td>Postdelivery maintenance/Emerging Technologies</td>
<td>16,18</td>
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<tr>
<td>Week 14 – Apr 12</td>
<td>Teams</td>
<td>4</td>
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<tr>
<td>Week 15 – Apr 19</td>
<td>Testing</td>
<td>6</td>
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| Week 16 – Apr 26  | **FINAL**  
(To be taken in person as a proctored test) | |

Please note this is a tentative schedule – some shifting could occur as we progress into the semester

**Please Note:**
This is a tentative schedule. There will be some shifting due to length and difficulty of subject matter. The tests could also shift either way by a week or so.

**INSTRUCTIONAL METHODOLOGY AND GRADING POLICY**

**Instructional methodology:** Something new this semester is the Distance Learning vehicle. Instead of using Elluminate, we will use Blackboard Collaborate. You should see the link to this under the course on CANVAS in the left-hand-side column. Let me know if you have problems accessing it.

**Grading Policy:** Student and instructor presentations, demonstrations, discussions, and hands-on use of computer tools to complete exercises and assignments. Students will also be expected to access web sites focused on program design techniques to research current issues, then report back to the class on their findings.

**Two exams.** Each of these exams is worth 15% of your grade (30% in all). The exams are not cumulative - each covers only the topics indicated, although an understanding of earlier material may be a practical necessity for understanding and solving problems on new material. There will be no makeup exams! Exceptions on medical grounds will require a doctor’s letter which will be verified by the appropriate department personnel.

**Assessment:** This will include the following criteria:
- An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems.
- An ability to function effectively on teams to accomplish a common goal
- An ability to communicate effectively, both orally and written, with a range of audiences.

**Quizzes & assignments** will be required regularly. You should submit all work on time. Tardiness in submission will be penalized (and, as announced for some assignments, not permitted). These will be worth a total of 60% of your grade. As assignments and quizzes will occur as we complete corresponding topics in the course, and how quickly we cover those topics can vary, dates for these assessments cannot be given in advance.

**Participation in on-line discussions** constitutes 10% of your grade. You are expected to frequently review the CANVAS discussion function and take part in discussions of assigned topics. It is anticipated that there will be several discussion topics during the course, with announced (and possibly overlapping) participation timeframes. Participation that occurs after the closing participation date for a topic will not be counted for credit!

**Class Attendance:** As mentioned earlier, class attendance is optional. However, it is my observation that final course grades tend to be positively correlated with regular class attendance, even in the absence of any credit for attendance, because understanding of the material is best gained through a combination of exposures to the material, of which course lecture is an important one. In any event, you are responsible for the material covered in class, any announcements, schedule changes, etc. Absenteeism is not an excuse for late work or missed exams unless approval from your instructor is obtained in advance.

**Incomplete Grade:** An Incomplete grade in the course is reserved for those with a strong compelling reason for
having missed a little bit of the work, and a completion plan agreed to by the student and instructor during the
course, as circumstances require. Otherwise, exams not taken or assignments not turned in will receive a zero for
that grade, and the course grade assigned accordingly.

STATEMENT ON ACADEMIC HONESTY
The instructor of this course trusts that all students behave in strict compliance with accepted standards of
academic honesty. A conscious effort is made to ensure that grading standards are fair, and that anyone who
makes an honest and consistent attempt to do well in the course will succeed, as, by this time in your degree
program, it is expected that you are capable of doing the work. There will be no tolerance for anyone who
attempts to "succeed" by dishonest routes.
Academic honesty includes, but is not limited to:
• Honesty in taking examinations – all exams are to be taken on an individual basis.
• Honesty in completing your assignments yourself or with your team member, as the case may be. There is no
objection to some degree of helpful collaboration in completion of assignments; often a rough spot can be
overcome with a helpful word. But assignments passed in for grading must be substantially one person's - the
submitter's - work. Please note that in many of the assignments for this course, it will be fairly obvious to the
instructor when students have collaborated beyond a reasonable degree (having exactly the same wrong
answer, for example, is usually a dead giveaway).
• Honesty in attributing others' work. In all submitted work, including papers and presentations, ideas, concepts
and quotations obtained from other persons' works must be properly attributed. Not doing so constitutes
theft of intellectual property.
• Consequences for violating this trust will be severe. Credit will not be given for any work that does not meet
the above criteria. In an extreme violation or repeated violations, a failing grade in the course for reasons of
academic dishonesty is an appropriate and reasonable penalty.

USF Sarasota-Manatee Policies and Procedures

Religious Observances
The University recognizes the right of students and faculty to observe major religious holidays. Students who
anticipate the necessity of being absent from class for a major religious observance must provide notice of the
date(s) to the instructor, in writing, by the second week of classes.

Disabilities Accommodation
Students are responsible for registering with the Office of Students with Disabilities Services (SDS) in order to
receive academic accommodations. Reasonable notice must be given to the SDS office (typically 5 working days)
for accommodations to be arranged. It is the responsibility of the student to provide each instructor with a copy
of the official Memo of Accommodation.  www.sarasota.usf.edu/Students/Disability/
Contact Information:  Pat Lakey, Coordinator      941-359-4714
plakey@sar.usf.edu

Academic Dishonesty
The University considers any form of plagiarism or cheating on exams, projects, or papers to be unacceptable
behavior. Please be sure to review the university’s policy in the catalog, USFSM Undergraduate Catalog or USFSM
Graduate Catalog and the USF Student Code of Conduct.
Undergraduate:  http://www.sarasota.usf.edu/Academics/Catalogs/
Graduate:  http://www.sarasota.usf.edu/Academics/Catalogs/
USF Student Code of Conduct:  http://www.sa.usf.edu/srr/page.asp?id=88
Academic Disruption
The University does not tolerate behavior that disrupts the learning process. The policy for addressing academic disruption is included with Academic Dishonesty in the catalog; USFSM Undergraduate Catalog or USFSM Graduate Catalog and the USF Student Code of Conduct.
Undergraduate: http://www.sarasota.usf.edu/Academics/Catalogs/
Graduate: http://www.sarasota.usf.edu/Academics/Catalogs/
USF Student Code of Conduct: http://www.sa.usf.edu/srr/page.asp?id=88

Contingency Plans
In the event of an emergency, it may be necessary for USFSM to suspend normal operations. During this time, USFSM may opt to continue delivery of instruction through methods that include but are not limited to: CANVAS, Elluminate, Skype, and email messaging and/or an alternate schedule. It’s the responsibility of the student to monitor CANVAS site for each class for course specific communication, and the main USFSM and College websites, emails, and MoBull messages for important general information. The USF hotline at 1 (800) 992-4231 is updated with pre-recorded information during an emergency.

Emergency Preparedness
It is strongly recommended that you become familiar with the USF Sarasota-Manatee Emergency Action Plan on the Safety Preparedness site http://www.sarasota.usf.edu/facilities/SafetyPreparedness.php

Fire Alarm Instructions
At the beginning of each semester please note the emergency exit maps posted in each classroom. These signs are marked with the primary evacuation route (red) and secondary evacuation route (orange) in case the building needs to be evacuated.

STUDENT WELLNESS
The Counseling and Wellness Center is a confidential resource where you can talk about incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. You can receive assistance in confidence. This confidential resource can help you without having to report your situation to the Office of Student Rights and Responsibilities (OSSR) or the Office of Diversity, Inclusion, and Equal Opportunity (DIEO); unless you request that they make a report. Please be aware that educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. If you disclose any of these situations in class, in papers, or to me personally, I am required to report it to OSSR or DIEO for investigation. The Deputy Coordinator for USFSM is Mary Beth Wallace, AVP for Student Enrollment, Engagement and Success, 941-359-4330 or marybeth@sar.usf.edu. Other number and resources:

- Counseling Center and Wellness Center 941-487-4254
- Victim Advocate (24/7) 941-504-8599

List of off-campus resources:
- Hope of Manatee: 941-755-6805
- Safe Place & Rape Crisis Center (SPARCC) – Sarasota: 941-365-1976
- First Call for Help- Manatee: 941-708-6488 -Sarasota & North Port 941-366-5025
- Manatee Glens: 941-782-4800