American Public University System

The Ultimate Advantage is an Educated Mind

School of Science and Technology
Department of Information Technology
ISSC345: Service-Oriented Architecture
3 Credit Hours
8 Week Course
Prerequisite(s): None

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Instructor Information

Instructor: (Bio)
Email:
Phone:
Office hours:

Course Description

This course examines the various aspects of a Service-oriented Architecture (SOA). It explores the comprehensive plan to interrelate business with technology. It displays how SOA combines the talents and skills of an entire organization, with its requisite needs and computing know-how. It focuses on the necessary tools—processes, best practices, and standards—for developing a sound SOA, Service-Oriented Modeling: Service Analysis, Design, and Architecture. It also introduces a service-oriented modeling framework that employs an agile and universal business and technology language to facilitate analysis, design, and architecture initiatives.

Course Scope

This course will allow students to see how an architecturally driven SOA paradigm can be used in an IT business to implement and run your application development life cycle. The student will also view the various business and IT organizational models, and the roles and responsibilities of the participants of each.

Course Objectives

The successful student will fulfill the following learning objectives:

1. Define Architecture Practice and why it is needed
2. Explain the value of a Service-Oriented Architecture
3. Understand the SOA Enterprise Architecture Framework
4. Transform Governance to Support SOA
5. Describe the SOA System Development Life Cycle
6. Establish a Capacity Plan for an organization under SOA
7. Present the Individuals and Functions involved in the SOA Process
8. Develop your company's SOA Business Strategy and Roadmap

Course Delivery Method

This 8 week course delivered in the APUS Sakai; via distance learning will enable students to complete academic work in a flexible manner, completely online. Resources and access to an online learning management system will be made available to each student. **Online assignments are due by the last day of each week (Sunday)** and include Forum questions (accomplished in groups through a threaded Forum). Assigned faculty will support the students throughout this eight-week course.

Resources

Required Text
Achieving Service-Oriented Architecture
by Rick Sweeney
John Wiley & Sons, Inc. Publications © 2010 (358 pages) Citation
ISBN:978-0-470-60451-9

Software Requirements
1. Microsoft Office (MS Word, MS Excel, MS PowerPoint)
2. Internet Explorer/Mozilla Firefox/Safari

Evaluation Procedures

The grading will be based on five graded lesson reviews, eight weekly Forum postings, and an individual project paper and presentation.

1. There will be five assignments (5% each) counting a total of 25% of the final grade. The assignments will follow each of the major milestones of the course. These assignments will be recaps of the week's lesson.

2. There will be eight weekly Forum postings you will need to respond to. Answers should be 2-3 paragraphs with a **topic sentence** that **restates the question** and **supporting sentences** using the terms, concepts, and theories from the required readings. Each answer should be a **minimum of 200 words** (about 6 or 7 sentences). You may **disagree**, **support** or **supplement** other students' answers using the terms, concepts and theories from the required readings. All responses should be a **courteous paragraph** that contains a **topic sentence** with good **supporting sentences**. You may respond multiple times with a continuous discussion with points and counter points. The key requirement is to express your idea and then **support your position** using the terms, concepts and theories from the required readings to demonstrate to me that you understand the material. The Forum postings will count as 35% (4.38% for each discussion posting) of the final grade.

3. There will be one final project that counts as 25% of the final grade. The content for the final project is listed under the Week 8 of this syllabus.

All assignments and Forum questions are required by 12:00 midnight Eastern Time of the Sunday of the week assigned

Grade Instruments	Points Possible	% of Final Grade
Forum Posts 1 – 8	**800**	**50%**
Weekly Assignments – 5	**500**	**25%**
Final Project and Presentation	**100**	**25%**
TOTAL	**1400 Points**	**100%**

Grading Scale

Please see the **student handbook** to reference the University's **grading scale**.

Course Outline

Week	Learning Objectives	Lesson Subject	Assignments
1	CO1, 2	**Week 1: What is an Architecture Practice, and Why Do You Need One?/Why is a SOA So Valuable?/A New Architecture for a New World/SOA and Channels**	*Course Begins* **Required Contact Info to Professor Reading: Chapters 1, 2, 3, and 4 *Disc: Forum #1**
2	CO3	**Week 2: SOA Enterprise Architecture Framework and Methodology/Incorporating Existing Enterprise Architecture Documents and Artifacts into the SOA~EAF**	**Reading: Chapters 5 and 6 *Disc: Forum #2 *Week 2 Assignment**
3	CO4	**Week 3: Dealing with Purchased or Leased Business Applications/Transforming Governance to Support SOA**	**Reading: Chapters 7 and 8 *Disc: Forum #3 *Week 3 Assignment**
4	CO5, 6	**Week 4: SOA System Development Life Cycle/Capacity Planning under SOA**	**Reading: Chapters 9 and 10 *Disc: Forum #4 *Week 4 Assignment**
5	CO7	**Week 5: People Involved in the SOA Process/Leveraging SOA to**	**Reading: Chapters 11 and 12 *Disc: Forum #5**

		Decommission, Replace, or Modernize Legacy Business Applications	*Week 5 Assignment
6	**CO8**	**Week 6: Implementing an Effective SOA Strategy under a Decentralized Business or IT Model**	**Reading: Chapter 13** ***Disc: Forum #6** ***Week 6 Assignment**
7	**CO8**	**Week 7: Assessing the Organization's SOA Maturity and Developing Your Company's SOA Business Strategy and Roadmap**	**Reading: Chapter 14** ***Disc: Forum #7**
8		**Final Course Assessment** **Final Project**	***Disc: Forum #8** ****Final Project Due*** ***Course Ends***

Course Overview

Course Deadlines/Milestones
- **Participation in discussions is required for Week 1 through Week 8**
- **End of Fourth Week: Final Project checkpoint submitted for feedback**
- **End of Sixth Week: Weeks 1-5 all work completed**
- **End of Eighth Week: Final project due to Professor**

Policies

Please see the **student handbook** to reference all University policies. Quick links to frequently asked question about policies are listed below.

Drop/Withdrawal Policy
Plagiarism Policy
Extension Process and Policy

WRITING EXPECTATIONS
All written submissions should be submitted in a font and page set-up that is readable and neat. It is recommended that students try to adhere to a consistent format, which is described below.
- Typewritten in double-spaced format with a readable style and font and submitted inside the electronic classroom (unless classroom access is not possible and other arrangements have been approved by the professor).
- Arial 11 or 12-point font or Times New Roman styles.
- Page margins Top, Bottom, Left Side and Right Side = 1 inch, with reasonable accommodation being made for special situations and online submission variances.

CITATION AND REFERENCE STYLE
Assignments completed in a narrative essay or composition format must follow APA guidelines. This course will require students to use the citation and reference style established by the American Psychological Association (APA), in which case students should follow the guidelines set forth in *Publication Manual of the American Psychological Association* (6th ed.). (2010). Washington, D.C.: American Psychological Association.

LATE ASSIGNMENTS
Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals I understand you must manage competing demands on your time. Should you need additional time to complete an assignment please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade. Assignments submitted late without a prearranged extension will be subject to a 10% a day late penalty. Once an assignment is graded, you can not go back and complete the work. **No late assignments will be accepted after the last day of the course.**

Academic Services

ONLINE LIBRARY RESEARCH CENTER & LEARNING RESOURCES
The Online Library Resource Center is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search engines on the open Web. In addition, the Center provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to orc@apus.edu.

- *Charles Town Library and Inter Library Loan:* The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.

- ***Electronic Books:*** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- ***Electronic Journals:*** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- ***Turnitin.com:*** Turnitin.com is a tool to improve student research skills that also detect plagiarism. Turnitin.com provides resources on developing topics and assignments that encourage and guide students in producing papers that are intellectually honest, original in thought, and clear in expression. This tool helps ensure a culture of adherence to the University's standards for intellectual honesty. Turnitin.com also reviews students' papers for matches with Internet materials and with thousands of student papers in its database, and returns an Originality Report to instructors and/or students.
- ***Smarthinking:*** Students have access to 10 free hours of tutoring service per year through Smarthinking. Tutoring is available in the following subjects: math (basic math through advanced calculus), science (biology, chemistry, and physics), **accounting, statistics, economics, Spanish,** writing, grammar, and more. Additional information is located in the Online Research Center. From the ORC home page, click on either the "Writing Center" or "Tutoring Center" and then click "Smarthinking." All login information is available.

Appendix A – Grading Rubric

All written assignments will be assessed according to this rubric. Note that a score of 0 may be assigned in any category where your work does not meet the criteria for the beginning level.

APUS Assignment Rubric Undergraduate Level 300-400	EXEMPLARY LEVEL 4	ACCOMPLISHED LEVEL 3	DEVELOPING LEVEL 2	BEGINNNIG LEVEL 1	TOTAL POINTS
FOCUS/THESIS	Student exhibits a defined and clear understanding of the assignment. Thesis is clearly defined and well constructed to help guide the reader throughout the assignment. Student builds upon the thesis of the assignment with well-documented and exceptional supporting facts, figures, and/or statements.	Establishes a good comprehension of topic and in the building of the thesis. Student demonstrates an effective presentation of thesis, with most support statements helping to support the key focus of assignment.	Student exhibits a basic understanding of the intended assignment, but the thesis is not fully supported throughout the assignment. While thesis helps to guide the development of the assignment, the reader may have some difficulty in seeing linkages between thoughts. While student has included a few supporting facts and statements, this has limited the quality of the assignment.	Exhibits a limited understanding of the assignment. Reader is unable to follow the logic used for the thesis and development of key themes. Introduction of thesis is not clearly evident, and reader must look deeper to discover the focus of the writer. Student's writing is weak in the inclusion of supporting facts or statements.	10
CONTENT/SUBJECT KNOWLEDGE	Student demonstrates proficient command of the subject matter in the assignment. Assignment shows an impressive level of depth of student's ability to relate course content to practical examples and applications. Student provides comprehensive analysis of details, facts, and concepts in a logical sequence.	Student exhibits above average usage of subject matter in assignment. Student provides above average ability in relating course content in examples given. Details and facts presented provide an adequate presentation of student's current level of subject matter knowledge.	The assignment reveals that the student has a general, fundamental understanding of the Resource. Whereas, there are areas of some concerning in the linkages provided between facts and supporting statements. Student generally explains concepts, but only meets the minimum requirements in this area.	Student tries to explain some concepts, but overlooks critical details. Assignment appears vague or incomplete in various segments. Student presents concepts in isolation, and does not perceive to have a logical sequencing of ideas.	20

CRITICAL THINKING SKILLS	Student demonstrates a higher-level of critical thinking necessary for 300-400 level work. Learner provides a strategic approach in presenting examples of problem solving or critical thinking, while drawing logical conclusions which are not immediately obvious. Student provides well-supported ideas and reflection with a variety of current and/or world views in the assignment. Student presents a genuine intellectual development of ideas throughout assignment.	Student exhibits a good command of critical thinking skills in the presentation of material and supporting statements. Assignment demonstrates the student's above average use of relating concepts by using a variety of factors. Overall, student provides adequate conclusions, with 2 or fewer errors.	Student takes a common, conventional approach in guiding the reader through various linkages and connections presented in assignment. However, student presents a limited perspective on key concepts throughout assignment. Student appears to have problems applying information in a problem-solving manner.	Student demonstrates beginning understanding of key concepts, but overlooks critical details. Learner is unable to apply information in a problem-solving fashion. Student presents confusing statements and facts in assignment. No evidence or little semblance of critical thinking skills.	20
ORGANIZATION OF IDEAS/FORMAT	Student thoroughly understands and excels in explaining all major points. An original, unique, and/or imaginative approach to overall ideas, concepts, and findings is presented. Overall format of assignment includes an appropriate introduction (or abstract), well- developed paragraphs, and conclusion. Finished assignment demonstrates student's ability to plan and organize research in a logical sequence. Student uses at least of 5-7 references in assignment.	Student explains the majority of points and concepts in the assignment. Learner demonstrates a good skill level in formatting and organizing material in assignment. Student presents an above average level of preparedness, with a few formatting errors. Assignment contains less than 5 resources.	Learner applies some points and concepts incorrectly. Student uses a variety of formatting styles, with some inconsistencies throughout the paper. Assignment does not have a continuous pattern of logical sequencing. Student uses less than 3 sources or references.	Assignment reveals formatting errors and a lack of organization. Student presents an incomplete attempt to provide linkages or explanation of key terms. The lack of appropriate references or source materials demonstrates the student's need for additional help or training in this area. Student needs to review and revise the assignment.	20
WRITING CONVENTIONS (GRAMMAR & MECHANICS)	Student demonstrates an excellent command of grammar, as well as presents research in a clear and concise writing style. Presents a thorough, extensive	Student provides an effective display of good writing and grammar. Assignment reflects student's ability to select appropriate word usage	Assignment reflects basic writing and grammar, but more than 5 errors. Key terms and concepts are somewhat vague and not completely explained by	Topics, concepts, and ideas are not coherently discussed or expressed in assignments. Student's writing style is weak and needs	20

	understanding of word usage. Student excels in the selection and development of a well-planned research assignment. Assignment is error-free and reflects student's ability to prepare a high-quality academic assignment.	and present an above average presentation of a given topic or issue. Assignment appears to be well written with no more than 3-5 errors. Student provides a final written product that covers the above-minimal requirements.	student. Student uses a basic vocabulary in assignment. Student's writing ability is average, but demonstrates a basic understanding of the subject matter.	improvement, along with numerous proofreading errors. Assignment lacks clarity, consistency, and correctness. Student needs to review and revise assignment.	
USE OF COMPUTER TECHNOLOGY/ APPLICATIONS	Student provides a high-caliber, formatted assignment. Learner exhibits excellent use of computer technology in the development of assignment. Quality and appropriateness of stated references demonstrate the student's ability to use technology to conduct applicable research. Given assignment includes appropriate word processing, spreadsheet and/or other computer applications as part of the final product.	Assignment presents an above-average use of formatting skills, with less than 3 errors. Students has a good command of computer applications to format information and/or figures in an appropriate format. Student uses at least two types of computer applications to produce a quality assignment.	Student demonstrates a basic knowledge of computer applications. Appearance of final assignment demonstrates the student's limited ability to format and present data. Resources used in assignment are limited. Student may need to obtain further help in the use of computer applications and Internet research.	Student needs to develop better formatting skills. The student may need to take additional training or obtain help from the Sakai Help Desk while preparing an assignment. Research and resources presented in the assignment are limited. Student needs to expand research scope. The number of formatting errors is not acceptable.	10
TOTAL POINTS					100