# UNIVERSITY OF SAN FRANCISCO College of Professional Studies

## (BSIS) Bachelor of Information Systems—Program Assessment Plan

#### **Program Goals**

Students who complete the Bachelor of Information Systems will be able to:

- 1. Identify the fundamentals of information systems and their meaning within an organization.
- 2. Participate in the design and development of information systems, demonstrating technical skills relevant to the construction of information systems, including database design and software programming.
- 3. Recognize and comprehend the importance of emergent technologies relevant to information systems, including telecommunications and electronic commerce.
- 4. Demonstrate Information Systems-relevant people, business, and team skills, incorporating ethics, humanistic values and professionalism.

### **Program Learning Outcomes**

- Students will recognize the components of information systems infrastructures, computing platforms, software architectures, and telecommunications networks. (Goal 1)
- Students will understand the fundamentals of telecommunications, including data, voice, image, and video, and the critical need for security of networks and data inside and outside of the organization. (Goal 1)
- Students will be able to use methods, techniques, and models for planning, analyzing, and designing information systems. (Goal 2)
- Students will understand and experience the principles of software design, development and testing using a relevant programming language.
   (Goal 2)
- Students will appreciate the growth and importance of the digital economy and the socioeconomic implications of information technology, electronic commerce, and consumer behavior. (Goal 3)
- Students will integrate the collective expertise incorporated herein, reflect on the ethical and humanistic aspects of information systems, and experience an information-systems-relevant service learning project within the community. (Goal 4)

## Curriculum Map

## **Bachelor of Information Systems (BSIS)**

	Your Course Numbers													
Your Program/Departmental Goals/Outcomes	BSIS 310	BSIS 312	BSIS 320	BSIS 315	BSIS 400	BSIS 405	BSIS	BSIS	330	<b>BSIS</b> 430				
1. Identify the fundamentals of information systems and their meaning within an organization.		•		•	•	•		•				•	•	•
Students will recognize the components of information systems infrastructures, computing platforms, software architectures, and telecommunications networks.	С	I		Ι	С		I	I						
b. Students will understand the fundamentals of telecommunications, including data, voice, image, and video, and the critical need for security of networks and data inside and outside of the organization.	Ι	I					С	I		Ι				
2. Participate in the design and development of information systems, demonstrating technical skills relevant to the construction of information systems, including database design and software programming.														
Students will be able to use methods, techniques, and models for planning, analyzing, and designing information systems.	I	M	С	M	M	С	I			M				
<ul> <li>Students will understand and experience the principles of software design, development and testing using a relevant programming language.</li> </ul>	Ι	I	I	С	I	M				M				
3. Recognize and comprehend the importance of emergent technologies relevant to information systems, including telecommunications and electronic commerce.			•		•		•	,		•				
Students will appreciate the growth and importance of the digital economy and the socioeconomic implications of information technology, electronic commerce, and consumer behavior.	Ι	С					M	(	2					
4. Demonstrate Information Systems-relevant people, business, and team skills, incorporating ethics, humanistic values and professionalism.														
a. Students will integrate the collective expertise incorporated herein, reflect on the ethical and humanistic aspects of information systems, and experience an information-systems-relevant service learning project within the community.	Ι	I						N	1	С				

**Key** I = Introduced with minimal coverage

M = Moderate Coverage

C = Comprehensive Coverage

## **Outcome Rubrics**

Outcome	Very Poor Achievement of Outcome	Poor Achievement of Outcome	Average Achievement of Outcome [Benchmark Standard]	Good Achievement of Outcome	Very Good Achievement of Outcome		
1. Recognize the components of information systems infrastructures, computing platforms, software architectures, and telecommunications networks.	Unable to correctly identify some components of information systems infrastructure, et al, and unable relate to their business experience	Unable to correctly identify some components of information systems infrastructure, et al, and/or unable to relate to their business experience.	Able to correctly identify components of information systems infrastructure, et al; Able to relate to their business experience.	Able to correctly identify components of information systems infrastructure, et al; Able to comprehend their interrelatedness; Able to incorporate into their business experience.	Can identify and fully explain components of information systems infrastructure, et al; Able to describe their interrelatedness; Have incorporated into their business experience.		
2. Students will understand the fundamentals of telecommunications, including data, voice, image, and video, and the critical need for security of networks and data inside and outside of the organization.	Unable to correctly identify fundamental aspects of telecommunications and need for security of networks and data and unable to relate to their business experience	Unable to correctly identify fundamental aspects of telecommunications and need for security of networks and data and/or unable to relate to their business experience	Able to correctly identify fundamental aspects of telecommunications and need for security of networks and data; Able to relate to their business experience	Able to correctly identify fundamental aspects of telecommunications and need for security of networks and data; Able to incorporate into their business experience	Able to correctly identify and fully explain fundamental aspects of telecommunications and need for security of networks and data; Have incorporated into their business experience		
3. Be able to use methods, techniques, and models for planning, analyzing, and designing information systems.	Unable to produce a complete and accurate systems design document either independently or in a team setting, and unable to relate to their business experience	Unable to produce a complete and accurate systems design document independently and/or unable to relate to their business experience	Able to produce at least 1 complete and accurate systems design document in a team setting; Able to relate to their business experience	Able to produce at least 1 complete and accurate systems design document independently; Able to incorporate into their business experience	Able to produce at least 1 complete and accurate systems design document independently; Have incorporate into their business experience		
4. Understand and experience the principles of software design, development and testing using a relevant programming language.	Unable to code selected programming assignments and unable to meet the programmatic and data standards indicated.	Unable to code selected programming assignments and/or unable to meet the programmatic and data standards indicated.	Able to code selected programming assignments, meeting the programmatic and data standards indicated.	Able to code selected programming assignments, exceeding the programmatic and data standards indicated; Can relate to their own business environment.	Able to code selected programming assignments, exceeding the programmatic and data standards indicated; Can relate to their own business environment.		

5. Appreciate the growth and importance of the digital economy and the socioeconomic implications of information technology, electronic commerce, and consumer behavior.	Unable to grasp the socioeconomic implications of information technology; able to describe the principles of electronic commerce; unable to propose an original eCommerce proposition capable of producing revenue	Able to identify and describe less than 3 major socioeconomic implications of information technology; able to understand the principles of electronic commerce; unable to propose an original eCommerce proposition capable of producing revenue	Able to identify and describe at least 3 major socioeconomic implications of information technology; able to understand the principles of electronic commerce; able to propose an original eCommerce proposition with three basic screens	Able to identify and describe 4-5 major socioeconomic implications of information technology; able to understand the principles of electronic commerce; able to propose an original eCommerce proposition, capable of ethically/humanistically producing revenues, with three or more basic screens	Able to identify and describe 4-5 major socioeconomic implications of information technology; able to understand the principles of electronic commerce; implemented original eCommerce proposition, capable of ethically/humanistically producing revenues
6. Integrate the collective expertise incorporated herein, reflect on the ethical and humanistic aspects of information systems, and experience an information-systems-relevant service learning project within the community.	Unable to participated as a member of a team implementing a working service learning project within the community	Participated in a minor way in a working service learning project within the community	Participated fully in a working service learning project within the community	Took a leadership role in a working service learning project within the community	Took a leadership role and handled one or more specific aspects of the design/development in a working service learning project within the community

## **APPENDIX ONE: Assessment Methods**

## **Assessment Measures**

Note: The assessments for Academic Year 2008-2009 shall include three courses:

- 1. BSIS 315 Software Programming Concepts
- 2. BSIS 330 Electronic Commerce Strategy. Architecture, and Design
- 3. BSIS 430 Project Planning and Development

The remaining BSIS courses shall be assessed in AY 2009-2010 and 2010-2011. This document covers only those Assessment Measures which shall be undertaken in AY 2008-2009.

### APPENDIX TWO: BSIS Course Descriptions and Course Learning Outcomes

#### **Outcomes**

The learning outcomes for each course are directly embodied in the homework, tests, presentations and projects assigned during the course and well-established in each course's syllabus. The attainment of learning is assisted by course design. While course-dependent, several tools are essential to success: (1) All assignments are delivered from the student to the teacher electronically via Blackboard, (2) Student assignments are broken down into smaller units and even large projects unfold through the period of the course, (3) Grading feedback is continuous throughout the course via Blackboard on-line grading and via in-person feedback, and (4) as these are small, on-going cohorts of students, who spend just over two years together, Wiki's (on Blackboard) are used so that students have access to selections of other student's work. In this way, all may see various levels of achievement, anyone may incorporate this performance and skill sets into their own work, and there is no question as to the expected level of performance relative to grades.

#### Software Programming Concepts (BSIS 315):

This course focuses on Outcomes 1, 3 and 4.

This course provides an introduction to the fundamentals of software programming. It is designed to provide a firm understanding of:

- How to analyze a programming requirement and recommend an algorithmic solution.
- How to design a logical algorithm to solve the problem, or run the program efficiently.
- How to work effectively with a compiler and software-programming environment.
- How to develop an understanding of object-oriented programming.
- How to recognize, analyze and explain technical data.
- How to test, implement and maintain the program.

#### Electronic Commerce Strategy. Architecture, and Design (BSIS 330)

This course focuses on Outcomes 1, 2, 5 and 6.

- This course provides an overview of Electronic Commerce, from a variety of perspectives: business, technology, and human impact. It is designed to provide a firm understanding of:
- How E-commerce affects human beings and their interrelationships, examining on-line relationships among E-commerce users, business interests, and national & international organizations
- How E-commerce has changed then basic economic and business forces driving commerce activities, particularly creating new global electronic markets with transparent pricing and efficient trading, changing logical & physical communities of people, as well as requiring new ways of marketing products and advertising
- What new business models are needed, reflecting the emerging relationships between companies and their suppliers, customers, competitors, the social consequences of conducting business in a virtual environment that is not confined by national borders, and the personal & social impact of dealing with technology that has the ability to easily collect huge volumes of data on customers, and easily disperse content at low costs
- What essential characteristics of the technological infrastructure are needed for E-Commerce, and how this infrastructure impacts those who use it, including the design of effective Web commerce sites, the economic tradeoffs between competing technologies, the security vs. usability issues, and the areas of science & technology directly affected by E-Commerce.
- What social issues the "on-line environment" creates and where ethical responsibility lies for actions taken on-line, including privacy & confidentiality concerns, anonymous users & accountability for on-line actions, and mis-use of technology resources, including on-line intrusions (hacking), spam, viruses/worms/spyware, etc.

Last Updated: 5/5/2009 6

#### Project Planning and Development (BSIS 430)

This course focuses on Outcomes 2, 3, 4 and 6.

This course introduces students to the managing of projects within an organizational context, including the processes related to initiating, planning, executing, controlling, reporting and closing a project, performed within a service learning environment. It is designed to provide a firm understanding of:

- How to identify the fundamentals of successful project management
- How to identify project processes and guidelines as defined by the Project Management Institute
- How to build and manage an effective project team
- How to prepare project budgets and timelines
- How to identify potential risks and establish a mitigation plan
- How to negotiate deliverables and timelines with the recipients of the final project

#### Time Frame

The timeframe for analysis of these three courses is:

BSIS 315 Software Programming Concepts Spring, 2009 Cohorts M0908,M3708

BSIS 330 Electronic Commerce Strategy. Architecture, and Design Fall, 2008 Cohort M3507

BSIS 430 Project Planning and Development Fall, 2008 Cohort M3507

#### Who Will Do the Assessment?

Information Systems Program Director Dr. Moira Gunn will be responsible for the assessment, working with each instructor to carry out the assessment. Professor Art Karshmer and Professor Daryoush Farsi shall be teaching the BSIS 315, while long-time adjunct faculty member William Kolb shall be teaching BSIS 330 and BSIS 430.

## How Data Will Be Used to Improve Program

Where students achieve a performance of "poor" or "very poor", additional attention will be given to that module within the course, as well as the student work and feedback approach to that work. An overall assessment of the achievement of program learning outcomes will be prepared on an annual basis by the Program Director and shared with the faculty through email distribution and at the annual faculty meeting. Changes in the curriculum or in individual courses suggested by the assessment will be implemented.