CARLETON UNIVERSITY
SPROTT SCHOOL OF BUSINESS
BUSI 3402 A
WINTER 2022
Systems Analysis and Design

Instructor: Ali Nazari
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CLASS TIME/ROOM:
Date and Time: Tuesday 14:25-17:25 (Note: first class meets on Tuesday, January 11, 2022; last class is April 12, 2022)
Location: Building HS 1301

Modality: In person

Pre-requisites & **Precluded Courses:** one of BUSI 2400, or COMP 2404, or SYSC 2004 (with a grade of C or higher). Precludes additional credit for SYSC 3100, BUSI 3403, (no longer offered) and BUSI 3404 (no longer offered).

Course Description

> Methods of analysis of computer-based information systems. The systems development life cycle, planning, analysis, design, implementation, and maintenance. Structured and object-oriented methods will be used. Use of a CASE tool. The course introduces the concepts, skills, methodologies, techniques, and tools essential for the successful development of information systems. Through class discussions, assignments, and team projects, students will learn methodologies to realize user requirements and will understand tools that help in translating the requirements into information systems.

Learning outcomes:

1. Understand the types of IT-based business needs.
2. Feasibility study of the project, setting priorities, and launching information system projects.
3. Define the problem/opportunity that takes place in the form of an information system project.
4. Apply methods to analyze a problem/opportunity, applying data modeling techniques.
5. Prepare a business requirements document based on the requirements framework and transfer it to the technical specifications required to set up the information system.
6. Identify project stakeholders to collect information using a variety of techniques and to present solutions to them.
7. Use project management methods to manage an information system project.
8. Articulate various systems acquisition alternatives, including the use of packaged systems (such as ERP, CRM, SCM, etc.) and outsourced design and development resources.
9. Use case tools in process and data modeling.
10. Articulate the principles of security and user experience in the system development process
11. Information system design including design, user interface design, data modeling, and information requirements.
12. Analyze and articulate ethical, cultural, and legal issues and their feasibilities among alternative solutions.

Reading(s)/Textbook(s)/Required Materials:

Required: Course lectures uploaded on Brightspace (Lecture three hours and tutorials one hour a week).

& Required Textbook

Title: Modern Systems Analysis and Design (2017, 8th Edition)
Authors: Joseph S Valacich, Joey F. George
Publisher: Pearson
ISBN: 0134204921 • 9780134204925
Textbook Website: Pearson - Modern Systems Analysis and Design, 8/E - Joseph S Valacich & Joey F. George

Additional resources:
- Scott Tilley, Systems Analysis and Design, 12th Edition, 2019

Lab and software
  Objective and tool: Use system development tools, i.e., IBM's Rational® Requirements Management, WebSphere Business Modeler, Rational System Architect, Rational Software Modeler, IBM DB2, and MS SQL Server, MS Visio and MS Project, to support the information systems analysis and design process.

  Note: Access to Rational software will be available to students registered in the course. Each student will be given access to the software. For MS Office Visio and Project software, please download from the following site: http://dreamspark.carleton.ca/.

Course Requirements & Methods of Evaluation (including due dates):
Evaluation

- Class participation (15%)
- Individual assignments (5 x 6% = 30%)
    o Assignment 1: Foundations for systems development - Due Date by Jan. 31st
    o Assignment 2: System Planning - Due Date by Feb. 7th
    o Assignment 3: System Analysis - Due Date by March 7th
    o Assignment 4: System Design- Due Date by March 21st
    o Assignment 5: Implementation & Maintenance - Due Date by April 4th
- Group term project (30%) - Due Date by April 5th, 12th
- Final examination (25%)- TBD

Class participation
The key to learn information systems analysis and design is to link classroom knowledge to practical application. Active participation in the classroom is very important in this course. You will be measured by your involvement in the in-class exercises (quantity and quality of your participation). Be prepared to respond to issues raised in class and bring questions and issues you encounter into the classroom.

Assignment and submission
There will be five assignments. Individual assignments are due at the date and time indicated. Each assignment's file should be named properly and in the following format: busi3402A_w22_assignment#_ LastName_CUID (e.g., busi3402A_w22_assignment#1_Nazari_100123456). Assignments must be submitted through Brightspace.

Group Term Project and Presentation
At the beginning of the term, students will form group of (max.) 5 for a term project. Bi-weekly project status report is expected of the teams. A final project report is due at the end of the term. Each team will be given 10-15 minutes to engage classmates about their projects. Presentations will be held in the last two week of the course. At the end of the term, each student will be asked to complete a peer-review form for self and other team members. A numerical grade (out of 100) will be assigned to team's term project. Each team member's term project grade will be determined by the grade for the team and team member's peer reviews and evaluations.

Examination
Final examination will be scheduled by the university and to be held in April 2022.
The final exam release date is the last day of classes and the due date is the last day of examinations.

Important Dates and Deadlines
Winter 2022: The Academic Year, **2021/2022 University calendar**

Course Grade
Students must meet the in-term performance criteria as specified in this course outline in order to pass the course. The course grade is determined by the evaluation criteria and is subject to Dean's approval.

Course Schedule:

Week / Date	Topic	Reading

1- Jan. 11	Course administration (lab, grouping and evaluation)
	
	- Developing Information Systems
	- The Systems Development Life Cycle (SDLC)
	- Approaches to Improving Development
	   o Case tools
	   o Agile methodologies
	   o Object-oriented analysis and design
		Textbook: Part One – Chapter 1
		Foundations for systems development (The Systems Development Environment)

2- Jan. 18	- Outsourcing - Sources of Software - Off-the-Shelf Software evaluation - Validating Purchased Software Information - Reuse and its role in software development	**Textbook: Part One – Chapter 2** **Foundations for systems development** (The Origins of Software)

3- Jan. 25	- The process of managing an information systems project: project initiation, planning, execution, and closedown,
	- Representing and scheduling project plans
	- Constructing a Gantt Chart and Network Diagram
	- Using project management software
	- Unique Characteristics of an OOSAD Project
		Textbook: Part One – Chapter 3
		Foundations for systems development
		  • Managing the Information Systems Project
		  • Object-Oriented Analysis and Design

4- Feb. 1	**Planning:**
	- The IS Development project identification and selection process
	- The corporate strategic planning and information systems planning process
	- The three classes of Internet electronic commerce applications: business- to-consumer, business-to-employee, and business-to-business
		Textbook: Part Two – Chapter 4 & 5
		Planning
		  • Identifying and Selecting Systems Development Projects
		  • Initiating and Planning Systems Development Projects

	- The steps involved in the project initiation and planning process - methods for assessing project feasibility (technical and economic) - Project plan - Project methodology - Project control and management	
5- Feb. 8	**Analysis:** System Requirements determination - Analysis and specification of system requirements - Data collection methods (interviews, documents) - Computing support for requirements determination - Factors affecting user experience - Use prototyping	**Textbook: Part Three – Chapter 6** **Analysis** (Determining System Requirements)
6. Feb. 15	**Analysis:** Object-Oriented Analysis and Design - The logical modeling of processes - Data Flow diagramming - Use Cases - Activity Diagrams - Sequence Diagrams - Business Process Modeling	**Textbook: Part Three – Chapter 7** **Analysis** (Structuring System Process Requirements)
Feb. 22-25	Winter reading break, no class	---
7. March. 1	**Analysis:** Object-Oriented Analysis and Design - Object Modeling - Class Diagrams - Requirement structuring and documentation	**Textbook: Part Three – Chapter 8** **Analysis** (Structuring System Data Requirements)
8. March 8	- The database design process - Entity-relationship (E-R) diagram / Normalization - physical database design concepts - designing forms and reports - Improving the usability of information factors	**Textbook: Part Four – Chapter 9 & 10** **Design** • Designing Databases • Designing Forms and Reports

9. March 15	- Methods for interacting with a system - Designing system interfaces - Designing system dialogues - Designing distributed and internet systems - Cloud computing	**Textbook: Part Four – Chapter 11 & 12 Design** • Designing Interfaces and Dialogues • Designing Distributed and Internet Systems
10. March 22	**Programming, testing, documentation** - Managing programming process - Testing (planning and types) - Installation - Documentation	**Textbook: Part Five – Chapter 13 Implementation**
11. March 29	**Training, support** - Maintaining Information Systems - Automated Development tools in Maintenance - Website maintenance - Security issues	**Textbook: Part Five – Chapter 14 Maintenance**
12. April 5	- **Course wrap-up and review** **Project presentation**	Groups:
13. April 12	**Project presentation**	Groups:

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Contribution to Learning Goals of the Program (BCom, BIB):

Program Learning Goal	Competencies Not Covered	Competencies Introduced (only)	Competencies Taught But Not Assessed	Competencies Taught and Assessed
		CHECK (X) ONE PER ROW		
BC1 Knowledge *Graduates will be skilled in applying foundational business knowledge to appropriate business contexts.*				X
BC2 Collaboration *Graduates will be collaborative and effective contributors in team environments that respect the experience, expertise and interest of all members.*				X
BC3 Critical Thinking *Graduates will be discerning critical thinkers, able to discuss different viewpoints, challenge biases and assumptions, and draw conclusions based on analysis and evaluation.*			X	
BC4 Communication *Graduates will be effective and persuasive in their communications.*				X
BI5 Global Awareness (BIB ONLY) *Graduates will be globally-minded.*				

ADDITIONAL INFORMATION

Course Sharing Websites

Materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for

personal use and may not be reproduced or redistributed without prior written consent of the author(s).

Required calculator in BUSI course examinations
If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

Group work
The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

Grades entered by Registrar:
WDN = Withdrawn from the course
DEF = Deferred

Academic Regulations
University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:
http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

Requests for Academic Accommodation
You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Pregnancy Accommodation
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

Religious obligation
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. **carleton.ca/pmc**

Survivors of Sexual Violence
As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: **carleton.ca/sexual-violence-support**

Accommodation for Student Activities
Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. **https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf**

For more information on academic accommodation, please contact the departmental administrator or visit: **students.carleton.ca/course-outline**

Academic Integrity
Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated.

Process: If an alleged violation occurs, all relevant documentation will be forwarded to the Dean. If the allegation proves true, the penalties may include; a grade of Failure on the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. **For a first offence, at a minimum, the penalty assigned will normally be a zero on the submitted work and at least a minimum full grade reduction of the final course grade. For a second offence, at a minimum, the penalty assigned will normally lead to a suspension from studies.**

Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at: https://carleton.ca/registrar/academic-integrity/.

Sprott Student Services
The Sprott Undergraduate Student Services Office offers program advising and overall student success support. Our team is available to discuss your academic goals and your program progression plans. We can also work with you to develop strategies for success, including study skills for Business. If you

experience any difficulty this term or if you would like to access support, please contact our team at bcom@sprott.carleton.ca or at bib@sprott.carleton.ca.

Centre for Student Academic Support
The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: carleton.ca/csas.

Important Information:
- Students must always retain a copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting **https://carleton.ca/its/get-started/new-students-2/**

Course Calendar description from the 2021/2022 University calendar:

Date	Activity
WINTER TERM 2022	
January 3, 2022	Deadline for course outlines to be made available to students registered in winter term courses
January 5, 2022	University reopens.
January 10, 2022	Winter term classes begin.
January 24, 2022	Last day for registration for winter term courses.
	Last day to change courses or sections (including auditing) for winter term courses.
	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in winter
January 21-23, 28-30,	Fall term deferred final examinations will be held.

Date	Activity
January 31, 2022	Last day for withdrawal from winter term and winter portion of fall/winter courses with full fee adjustment. Withdrawals after this date will result in a permanent notation of
February 18, 2022	April examination schedule available online.
February 21, 2022	Statutory holiday. University closed.
February 22-25, 2022	Winter Break, no classes.
March 1, 2022	Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.
	Last day for receipt of applications to Bachelor of Architecture, Bachelor of Industrial Design, Bachelor of Information Technology (Interactive Multimedia and Design),
	Last day for receipt of applications for admission to an undergraduate program for the summer term.
	Last day for receipt of applications for admission from candidates who wish to be guaranteed consideration for financial assistance (including Carleton fellowships,
March 16, 2022	Last day to request Formal Examination Accommodation Forms for April examinations to the Paul Menton Centre for Students with Disabilities. Note that it may
March 29, 2022	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in winter term or fall/winter courses before
April 1, 2022	Last day for receipt of applications for admission to an undergraduate program for the fall/winter session, from candidates whose documents originate outside Canada or the
	Last day for receipt of applications from potential spring (June) graduates.
April 12, 2022	Winter term ends.

Date	Activity
	Last day of fall/winter and winter term classes.
	Last day for take home examinations to be assigned, with the exception of those conforming to the Examination regulations in the Academic Regulations of the
	Last day for academic withdrawal from fall/winter and winter term courses.
	Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall/winter and winter term courses.
April 13, 2022	No classes or examinations take place.
April 14-28, 2022	Final examinations in winter term and fall/winter courses may be held. Examinations are normally held all seven days of the week.
April 15, 2022	Statutory holiday. University closed
April 28, 2022	All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations of the
May 1, 2022	Last day for receipt of applications for undergraduate internal degree transfers to allow for registration for the summer session.
May 13, 2022	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring
May 20-June 1, 2022	Fall/winter and winter term deferred final examinations will be held.
June 1, 2022	Last day for receipt of applications for admission to an undergraduate program for the fall/winter session except for applications due February 1 or March 1 or April 1.
June 15, 2022	Last day for receipt of applications for undergraduate degree program transfers for the fall term.