Course Outline

School:	Eng. Tech. & Applied Science
Department:	Information and Communication Engineering Technology (ICET)
Course Title:	Systems Integration
Course Code:	COMP 321
Course Hours/Credits:	56
Prerequisites:	COMP 246, EN 253, ENGL 253
Co-requisites:	N/A
Eligible for Prior Learning, Assessment and Recognition:	Yes
Originated by:	Mohamed Khan
Creation Date:	Fall 2004
Revised by:	Mohamed Khan
Revision Date:	Fall 2014
Current Semester:	Fall 2018
Approved by:	*ppesikan c/o*

Chairperson/Dean

Acknowledgement of Traditional Lands

Centennial is proud to be a part of a rich history of education in this province and in this city. We acknowledge that we are on the treaty lands and territory of the Mississaugas of the Credit First Nation and pay tribute to their legacy and the legacy of all First Peoples of Canada, as we strengthen ties with the communities we serve and build the future through learning and through our graduates. Today the traditional meeting place of Toronto is still home to many Indigenous People from across Turtle Island and we are grateful to have the opportunity to work in the communities that have grown in the treaty lands of the Mississaugas. We acknowledge that we are all treaty people and accept our responsibility to honor all our relations.

Course Description

In this course, students will learn the concept of integration as it relates to business processes and information Technology at the Enterprise level. Systems Integration models and concepts of ERPs as cross-functional and process-based systems are demonstrated through software tools such as CRM, SCM, HRM & BI and the Cloud technology. The benefits of these tools are discussed in detail to highlight their effectiveness and efficiency in modern day business operations. UML documentary standards will be adhered to in order to maintain the OO Software Engineering paradigm approach that began in COMP246. Data models are also fundamental requirements. The term projects will center on CRMs and students will engage in the study and walk-through using free download or SaaS of popular ERP Vendor tools such Microsoft DynamicsCRM, Oracle CRM (Siebel), Salesforce and ZOHO CRM.

Program Outcomes

Successful completion of this and other courses in the program culminates in the achievement of the Vocational Learning Outcomes (program outcomes) set by the Ministry of Advanced Education and Skills Development in the Program Standard. The VLOs express the learning a student must reliably demonstrate before graduation. To ensure a meaningful learning experience and to better understand how this course and program prepare graduates for success, students are encouraged to review the Program Standard by visiting http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/. For apprenticeship-based programs, visit http://www.collegeoftrades.ca/training-standards.

Course Learning Outcomes

The student will reliably demonstrate the ability to:

1. Discuss enterprise-wide integration through ERP strategies
2. Discuss business processes, Business Process Re-engineering (BPR) and workflows in the context of
   ERPs.
3. Illustrate business workflows and integration in ERPs
4. Illustrate the components and organizational structure of ERP architecture
5. Produce lab-based tasks in process-modeling ERP applications
6. Discuss ERP functionalities of CRM, HCM, SCM & BI with Cloud Technology
7. Investigate through lab-based tasks the detailed workflows and functionalities of ERP- CRM software tools.
8. Conduct walkthroughs of major vendor CRM applications such as Microsoft Dynamics, Zoho Oracle Siebel & Salesforce with SaaS and Cloud.

9. Discuss EAI (Enterprise Application Integration) tools for systems integration
10. Apply effective teamwork approach in a group-based case project
11. Prepare and effectively present project work to peers and faculty and to obtain their feedback.

Essential Employability Skills (EES)

The student will reliably demonstrate the ability to*:

1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.
4. Apply a systematic approach to solve problems.
5. Use a variety of thinking skills to anticipate and solve problems.
6. Locate, select, organize, and document information using appropriate technology and information systems.
7. Analyze, evaluate, and apply relevant information from a variety of sources.
8. Show respect for diverse opinions, values belief systems, and contributions of others.
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.

*There are 11 Essential Employability Skills outcomes as per the Ministry Program Standard. Of these 11 outcomes, the following will be assessed in this course.

Global Citizenship and Equity (GC&E) Outcomes

The student will reliably demonstrate the ability to*:

4. Analyze the use of the world's resources to achieve sustainability and equitable distribution at the personal, professional, and global level.

*There are 6 institutional Global Citizenship & Equity outcomes. Of these 6 outcomes, the following will be assessed in this course.

Methods of Instruction

Blended Delivery is adopted for this course- 50% On-Line (Theory) and 50% Practical (Lab).

Text and other Instructional/Learning Materials

Text Book(s):

Bradford, M. 2012. Modern ERP: Select, Implement & Use Today's Advanced Systems Ebook: Second Edition. ISBN 13: 9781105763830

OR: Bradford, M. 2010. Modern ERP: Select, Implement & Use- Today's Advanced Systems Second Edition.   Hardcopy ISBN-13: 978-0557434077

Online Resource(s):

eCentennial --PPT slides, weblinks and Other related documents, eBook

Material(s) required for completing this course:

Text & Instructor's assigned readings and researh

Custom Courseware:

The course will use blended approach with a 50% On-Line delivery

Classroom and Equipment Requirements

Lab + the On-Line component will require a set-up by faculty to have Lecture and Quizzes set up to ensure access is secure and that faculty-student communication is seamless.

Evaluation Scheme

- ⇨ Quizzes: 4 ON-LINE Quizzes over the semester
- ⇨ Assignment Set 1: ERP Architecture & ERP Workflows with reference to SCM, CRM, HCM & BI
- ⇨ Assignment Set 2: Vendor Specific Customer Relations Management(CRM) Walk-throughs
- ⇨ Test # 1: First Term Test
- ⇨ Term Test # 2: Second Term Test

Evaluation Name	CLO(s)	EES Outcome(s)	GCE Outcome(s)	Weight/100
Quizzes	1, 2, 3, 4, 6, 7, 8, 9	1, 2, 4, 5, 6, 7	4	20
Assignment Set 1	1, 2, 3, 4, 5, 6	1, 2, 4, 5, 6, 7, 8, 9, 10, 11		15
Assignment Set 2	7, 8, 9, 10, 11	1, 2, 4, 5, 6, 7, 8, 9, 10, 11		15
Test # 1	1, 2, 3, 4, 5, 6	1, 2, 4, 5, 6, 7		25
Term Test # 2	6, 7, 8, 9	1, 2, 4, 5, 6, 7	4	25
Total				100%

If students are unable to write a test they should immediately contact their professor or program Chair for advice. In exceptional and well documented circumstances (e.g. unforeseen family problems, serious illness, or death of a close family member), students may be able to write a make-up test.

All submitted work may be reviewed for authenticity and originality utilizing Turnitin®. Students who do not wish to have their work submitted to Turnitin® must, by the end of the second week of class, communicate this in writing to the instructor and make mutually agreeable alternate arrangements.

When writing tests, students must be able to produce official College photo identification or they may be refused the right to take the test or test results will be void.

Student Accommodation

Students with permanent or temporary accommodations who require academic accommodations are encouraged to register with the Centre for Students with Disabilities (CSD) located at Ashtonbee (L1-04), Progress (C1-03), Morningside (Rm 190), and Story Arts Campus (Rm 284). Documentation outlining the functional limitations of a disability is required; however, interim accommodations pending receipt of documentation may be possible. This service is free and confidential. For more information, please email csd@centennialcollege.ca.

Use of Dictionaries

- Any dictionary (hard copy or electronic) may be used in regular class work.

Program or School Policies

N/A

Course Policies

N/A

College Policies

Students should familiarize themselves with all College Policies that cover academic matters and student conduct.

All students and employees have the right to study and work in an environment that is free from discrimination and harassment and promotes respect and equity. Centennial policies ensure all incidents of harassment, discrimination, bullying and violence will be addressed and responded to accordingly.

Academic honesty is integral to the learning process and a necessary ingredient of academic integrity. Academic dishonesty includes cheating, plagiarism, and impersonation. All of these occur when the work of others is presented by a student as their own and/or without citing sources of information. Breaches of academic honesty may result in a failing grade on the assignment/course, suspension or expulsion from the college.

For more information on these and other policies, please visit www.centennialcollege.ca/about-centennial/college-overview/college-policies.

Students enrolled in a joint or collaborative program are subject to the partner institution's academic policies.

PLAR Process

This course is eligible for Prior Learning Assessment and Recognition (PLAR). PLAR is a process by which course credit may be granted for past learning acquired through work or other life experiences. The PLAR process involves completing an assessment (portfolio, test, assignment, etc.) that reliably demonstrates achievement of the course learning outcomes. Contact the academic school to obtain information on the PLAR process and the required assessment.

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Topical Outline (subject to change):

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
1	What is ERP? ERP-Supported Businesses Typical Models in an ERP system Who uses and who needs to know about ERPs	Text -Chapter 1 - Introduction to Enterprise Resource Planning (ERP)	Explain integrated processes and information systems Discuss ERPs role in more effective and efficient business processes Discuss ERP & organizational standardization Explain ERP and Elimination information asymmetries	Lecture & Lab		
2	ERP value – Integration Before and After ERP Best Practices in ERPs ERP system benefits ERP evolution Current ERP Architecture	Text Chapter 1-2 ERP Technology	Explain ERPs in on-line and real-time information Discuss intra- and inter-organization communication and collaboration Explain how ERP an reduce complexity of application and technology portfolios	Lecture, Discussion & Lab	Quiz # 1	Week 2
3	IT infrastructure for ERP ERP Interface e.g SAS portal Back Office.Front Office Databases for ERPs - - ERD Concepts and Model	Text - Chapter 2 ERP Technology	Explain 3- Tiered Architecture: Cli ent, Business logic and Database of integrated systems Illustrate Dashboard customization Discuss Front end and Back end integration Explain Relational database terminology and systems integration	Lecture, discussion & Lab	Assignment # 1 Defined	
4	EAI & ERPs – Enterprise Application Integration Technology ERP, SaaS & CLOUD	Text Chapters 2-3	Discuss EAI & ERP Explain Cloud Technology and SaaS in ERP systems	Lecture, discussion & lab	Assignment 1 & Quiz # 2	Week 4
5	Business Process Re-Engineering (BPR) Benefits vs Challenges of BPR Types of Re-engineering Targets of re-engineering	Text Chapter 3-ERP & Business Process Re-engineering	Discuss Business Process Re-engineering as a fundamental, radical, redesign in business processes to achieve dramatic improvements in key measures of performance such as cost, quality, speed, and service Explain Information Technology driven BPR	Lecture, Discussion & Lab	Assignment # 1 - Progress report	Week 5

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
	engineering Components and Constituents of BPR					
6	ERP UML Graphical representation & Flowharting ERDs Process mapping Process Mapping	Text Chapter 4 Systems diagraming and Process Mapping	Apply best practices in systems diagramming with Flowcharts, ERDs and UML documentation Employ Visual tools such Visual Paradigm and MS Visio for process mapping	Lecture, discussion & Lab	Asssignment # 1 Due	Week 6
7	Review and Term Test 1	Text Chapters 1-4	Perform Assessment & Evaluation of Chapters 1-4 topics	Discussion & Test # 1	Test # 1	Week 7
8	ERP Life cycle: Planning Package Selection Implementation Maintenance Planning & Package Selection Total Cost of Ownership Application License Database license Hardware Implementation Services Ongoing costs Hidden costs In-House Vs SaaS	Text Chapter 5 : ERP Life Cycle –Planning & Package Selection	Explain ERP Life Cycle Discuss the "best" application/service using the criteria of functionality, affordability, user-friendliness, customizability, and vendor support	Lecture, discussion & Lab	Assignment # 2 Defined	Week 8
9	Implementation, Operation and Maintenance Implementation Methodologies Installation/SaaS	Text Chapter 6 ERP Life Cycle: Implementation, Operation and Maintenance	Explain Phased Implementation – ERP system is rolled out by functionality (by module) Discuss Big Bang Implementation – replaces all business processes and/or entire legacy system all at once Explain Franchising Implementation – independent ERP systems are installed in	Lecture, discussion & Lab	Quiz # 3	Week 9

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
	Configuration and customization Testing Change Management Interfacing with other systems Training Operation and Maintenance		each business unit, while common processes are linked across the organizations Explain On-Demand Implementation – uses the hosted Software as a Service (SaaS) model			
10	Customer Relations Management (CRM) Modules: Sales Order Processes & Functions Customer Relations Processes and functions Marketing Processes and functions	Text Chapter 7 ERP Sales, CRM and Knowledge Management	Discuss CRM Functionalities and ERP Integration	Lecture, discussion & Lab	Assignment # 2 - Progress report	Week 10
11	CRM architecture CRM ERP integration and software tools CRM Vendor Selection: Microsoft Dynamics, Oracle Siebel, SalesForce & Zoho	Text Chapter 7	Illustrate the architectural model of CRM Discuss CRM Business Intelligence and the management decision making process Identify the Top CRM Vendors	Lecture, Discussion & Lab	Quiz # 4 & Assignment 2 Progress Report	Week 11
12	CRM Tools Walk-throughs & transactions CRM simulation & Reporting - Microsoft Dynamics - Oracle Siebel	CRM Software tools -	Perform Walk-throughs of Microsoft Dynamics & Oracle Siebel. Illustrate functionalities and Reporting	Lab & Discussion	Assignment 2 - due	Week 12
13	CRM Tools Walk-throughs & transactions CRM simulation & Reporting	CRM Software Tools	Perform Walk-throughs of SalesForce & ZOHO. Illustrate functionalities and Reporting	Lab & Discussion	Assignment # 2 Review	Week 13

Week	Topics	Readings/Materials	Weekly Learning Outcome(s)	Instructional Strategies	Evaluation Name	Evaluation Date
	- SalesForce - ZOHO					
14	Review of Chapters 5-7 & CRM Software Tools	Chapters 5-7 & CRM Software Tool	Evaluate on the ERPs & CRM	Review & Test # 2	Test # 2	Week 14