SYST28951
Systems Development Methodologies

Sheridan

I: Administrative Information   II: Course Details   III: Topical Outline(s)   Open in Word

Retain during the course and for future use when applying for credit at other educational institutions

Land Acknowledgement

Sheridan College resides on land that has been, and still is, the traditional territory of several Indigenous nations, including the Anishinaabe, the Haudenosaunee Confederacy, the Wendat, and the Mississaugas of the Credit First Nation. We recognize this territory is covered by the Dish with One Spoon treaty and the Two Row Wampum treaty, which emphasize the importance of joint stewardship, peace, and respectful relationships.

As an institution of higher learning Sheridan embraces the critical role that education must play in facilitating real transformational change. We continue our collective efforts to recognize Canada's colonial history and to take steps to meaningful Truth and Reconciliation.

Section I: Administrative Information

Program(s): Bachelor of Comp.& Netw. Comm., CST-Information Systems Eng, CST-Software Dev & Network Eng, CST-Software Engineering, Computer Programming
Program Coordinator(s): Simon Hood, Ann Cadger, Felix Carapaica, Walid Belal, Satyendra Narayan
Course Leader or Contact: Wael Channaa
Version: 20230905_00
Status: Approved (APPR)

Section I Notes: N/A

Total hours: 42.0
Credit Value: 3.0
Credit Value Notes: N/A
Effective: Fall 2023
Prerequisites: (SYST15892 AND SYST17796 AND COMM13729)
Corequisites: N/A
Equivalents: N/A
Pre/Co/Equiv Notes: Pre-requisite courses are not required for this course in PCNCT. Students gain prior learning to prepare them through Brock University courses.

Section II: Course Details

Detailed Description

Students are introduced to the essential principles of systems development, with a focus on object oriented methodology. Students apply this understanding to an in-depth study of the analysis and design of a proposed system. They document the workings of the proposed system using various reports and UML diagrams. Students expand their knowledge base of Systems development concepts such as requirements gathering, user interface design, cost benefit analysis, and system implementation. Through exposure to real world systems analysis activities students follow business formal formats and when creating course deliverables. Using a case study approach, students apply the concepts and techniques in a systematic manner. Students use an industry grade Diagramming/CASE tool to assist in the system documentation.

Program Context

Bachelor of Comp.& Netw. Comm.   **Program Coordinator(s):** Felix
                                        Carapaica

This required course extends the students' knowledge of object oriented analysis
and design. Various tools and techniques are used to document and communicate
system specifications.

CST-Information Systems Eng   **Program Coordinator(s):** Walid Belal

This required course extends the students' knowledge of object oriented analysis
and design. Various tools and techniques are used to document and communicate
system specifications.

CST-Software Dev & Network Eng   **Program Coordinator(s):** Simon Hood

This required course extends the students' knowledge of object oriented analysis
and design. Various tools and techniques are used to document and communicate
system specifications.

CST-Software Engineering   **Program Coordinator(s):** Satyendra
                                        Narayan

This required course extends the students' knowledge of object oriented analysis
and design. Various tools and techniques are used to document and communicate
system specifications.

Computer Programming   **Program Coordinator(s):** Ann Cadger,
                                        Satyendra Narayan

This required course extends the students' knowledge of object oriented analysis
and design. Various tools and techniques are used to document and communicate
system specifications.

Course Critical Performance and Learning Outcomes

Critical Performance:

By the end of this course students will have demonstrated the ability to synthesize a proposed
system model complete with requirements analysis, UML diagrams, reports, and formal
specification documents.

Learning Outcomes:

To achieve the critical performance, students will have demonstrated the ability to:

1. Describe the terms, processes and concepts of systems development
2. Apply concepts such as requirements gathering, system design, and system architecture
   to a case study
3. Apply object oriented principles to systems development
4. Complete a thorough requirements analysis of the case study using CASE tools
5. Document new system requirements using UML diagrams
6. Design reports to support human/computer interactions
7. Develop formal specification documents to communicate design specifications to
   stakeholders
8. Create a presentation that communicates the components of the application system

Evaluation Plan
Students demonstrate their learning in the following ways:

Evaluation Plan: IN-CLASS

5 quizzes @ 2% each 10.0%

Team contract	2.0%
Requirements spec	10.0%
Design spec	13.0%
Presentation	5.0%
2 tests @ 30% each	60.0%
Total	100.0%

Evaluation Notes and Academic Missed Work Procedure:
To pass the course, students must achieve a 50% weighted average across the tests and the exams and at least 50% overall in the course.

Students must submit/complete all assignments, in-class activities and projects by the scheduled due date and write all tests on the specified date/time. Exceptions will only be made under extraordinary circumstances.

Refer to the School of Applied Computing Academic Procedures for Evaluations for more details regarding missed work: Procedures for Evaluations

Provincial Context
The course meets the following Ministry of Colleges and Universities requirements:

Essential Employability Skills
Essential Employability Skills emphasized in the course:

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

Prior Learning Assessment and Recognition
PLAR Contact (if course is PLAR-eligible) - Office of the Registrar
Students may apply to receive credit by demonstrating achievement of the course learning outcomes through previous relevant work/life experience, service, self-study and training on the job. This course is eligible for challenge through the following method(s):

- Challenge Exam
  Notes:

Section III: Topical Outline

Some details of this outline may change as a result of circumstances such as weather cancellations, College and student activities, and class timetabling.
Instruction Mode: In-Class

Professor: Multiple Professors
Resource(s):
Course material costs can be found through the Sheridan Bookstore

	Type	Description
Required	Other	A series of online readings delivered as an electronic course package.

Applicable student group(s): PCOMP - Computer Programmer, PSISE - Computer Systems Technology ? Information Systems Engineering, PCSSN - Computer Systems Technician - Software Engineering, PCSTS - Computer Systems Technology - Software Development and Network Engineering, PCNCT - Bachelor of Computing and Network Communications
Course Details:
Module 1 – Development Methodologies – learning outcomes 1,2,3
Overview of Systems Analysis and Design
Approaches to systems development
Context Diagrams
Team Contract (2%)
Quiz 1 (2%)

Module 2 - Systems Analysis – learning outcomes 1,2,3,4,5,7
Eliciting System Requirements
Use cases and narratives
User Acceptance Tests
Domain modeling
Requirements Spec (10%)
Quiz 2 and 3 (each @ 2%)
Test 1 (30%)

Module 3 - Systems Design - learning outcomes 1,2,3,6,7
Detailed Design Models
Reports
New System Design Spec (13%)
Quiz 4 (2%)

Module 4 – Feasibility and Deployment – learning outcomes 1,8
Feasibility Analysis
Deploying the new system
Testing
Presentations (5%)
Quiz 5 (2%)
Test 2 (30%)

Sheridan Policies

It is recommended that students read the following policies in relation to course outlines:

- **Academic Integrity**
- **Copyright**
- **Intellectual Property**
- **Respectful Behaviour**
- **Accessible Learning**

All Sheridan policies can be viewed on the Sheridan policy website.

Appropriate use of generative Artificial Intelligence tools: In alignment with Sheridan's Academic Integrity Policy, students should consult with their professors and/or refer to evaluation instructions regarding the appropriate use, or prohibition, of generative Artificial Intelligence (AI) tools for coursework. Turnitin AI detection software may be used by faculty members to screen assignment submissions or exams for unauthorized use of artificial intelligence.

Course Outline Changes: The information contained in this Course Outline including but not limited to faculty and program information and course description is subject to change without notice. Nothing in this Course Outline should be viewed as a

representation, offer and/or warranty. Students are responsible for reading the Important Notice and Disclaimer which applies to Programs and Courses.