CIST-108 – Software Analysis and Design

Technology

Effective Term & Year: Fall 2025
Course Outline Review Date: 2030-03-01

Program Area: Information Technology

Description:

In this course students are exposed to the pillars of the Software Development Life Cycle (SDLC). Students explore and apply the concepts required to analyze, design, create, install and document a systems project through individual and team exercises. Learners will be exposed to key project management concepts and practices.

Using Object Oriented Design (OOD), students learn how to identify classes and build the domain model. Additionally, learners are introduced to an industry standard modeling graphical language: Unified Modeling Language (UML). Students learn the features of various Software Development Life Cycle (SDLC) patterns such as the Agile iterative model and the WaterFall model. Learners will learn the key players and stakeholders in a typical project and their roles. Various testing types such as unit testing, feature testing, regression testing, user acceptance testing, smoke test, and functional testing are also introduced.

Program Information:

This course is required for the first year of the Computer Information Systems Technology program.

Delivery Methods: Hybrid – On-campus (Face-to-Face) and Online

Credit Type: College of the Rockies Credits

Credits: 3

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	30
Seminar/Tutorials	
Laboratory/Studio	30
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	60

Course Requisites:

- Completed the following:
  - CIST102 – Introduction to Programming (4)

Prior Learning and Recognition: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, work-based assessment or a combination of assessments that is appropriate to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR) or contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see https://www.bctransferguide.ca/ or https://transferalberta.alberta.ca . For more transfer credit information, please visit https://www.cotr.bc.ca/Transfer

All requests for course transfer credit from institutions in British Columba or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Resources available digitally through the online platform.

Please see the instructor's syllabus or check COTR's online text calculator https://textbook.cotr.bc.ca/ for a complete list of the currently required textbooks.

Learning Outcomes:

Upon the successful completion of this course, students will be able to

- describe the software life cycle;
- explain project management concepts;
- identify key players and stakeholders in a typical project and describe their roles; and
- prepare a software project for deployment by following appropriate steps for project initiation, project planning and analysis, testing, and feedback through individual and team exercises
    - design software using object-oriented best practices;
    - prepare UML models for software design;
    - Use Object Oriented Design (OOD) to identify classes and build the domain model
    - prepare project tests, such as such as unit testing, feature testing, regression testing, user acceptance testing, smoke test, and functional testing
    - analyze user feedback in order to refine a design and grow a system.

Course Topics:

- The software life cycle
- Project management concepts (Agile iterative model and the WaterFall model)
- The methods for initiating projects
- Project analysis
- UML models for software design
- Using object-oriented to design software
- Project tests
- Software project for deployment
- Object Oriented Design (OOD)

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Assignments (x3)	30%
Participation	10%
Midterm Exam	30%

Final Exam	30%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of “D” grants credit, but may not be sufficient as a prerequisite for sequential courses.

Evaluation Notes Comments:

Please see the instructor’s syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.1.4 Course Audit
- Policy 2.4.1 Credential Framework
- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Rights, Responsibilities and Conduct
- Policy 2.4.8 Academic Performance
- Policy 2.4.9 Student Feedback and Concerns
- Policy 2.4.11 Storage of Academic Works
- Policy 2.5.3 Student Appeal
- Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete

material while meeting the learning outcomes of this course outline.