COLLEGE OF
THE ROCKIES

COMP-090 – Computer Applications – Provincial Level

College Preparation and Upgrading

Effective Term & Year: Fall 2025
Course Outline Review Date: 2030-04-01

Program Area: Upgrading for Academic and Career Entry

Description:

This course is designed to equip students with essential skills in computer application software through hands-on project work. This course emphasizes critical thinking and problem-solving, preparing learners to navigate the expansive landscape of technology effectively.

Program Information:

Skills developed In COMP 090 will be useful in COMP 153 or any program at the College of the Rockies. This course qualifies for the BC Adult Graduation Diploma.

Delivery Methods: Directed/Guided Studies

Credit Type: ABE Credits

Credits: 3

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	90
Seminar/Tutorials	
Laboratory/Studio	
Practicum/Field Experience	
Co-op/Work Experience	
Other	

Total	90

Course Requisites:

None

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 Columbia or elsewhere should go to the College of the Rockies Enrollment Service office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date, course material included chapters from the following open educational resource (OER):

Bolling, Tammie, et al. *Workplace Software and Skills*. OpenStax, 2023, https://openstax.org/books/workplace-software-skills/pages/1-chapter-scenario.

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:

Goal Statement

The goals for the Provincial Level Computing Studies are:

- to develop problem solving/critical thinking skills utilizing computer application software as a tool. Towards this end, project work will be emphasized.
- to build on computer software skills and outcomes as described by the learning outcomes of the advanced level computing studies.

Learning Outcomes

These learning outcomes come from the 2024-2025 edition of the ABE Articulation Handbook under Computer Studies: Provincial Level – Computer Applications, located at www.bctransferguide.ca/transfer-options/adult-basic-education/past-abe-guides/

Because of the wide and ever expanding nature of computing applications, it is both impossible and undesirable to include all outcomes in a single course. A computing studies course at the provincial level will consist of a minimum of two from the following categories:

1. Current Technologies

It is expected that the learner will be able to:

- search all facets of the web efficiently (text, images, videos) for material relevant to a specific inquiry
- analyze websites critically for value, accuracy, potential malware, and bias
- critically evaluate "crowd sourcing" sites as research tools, e.g. opinions on consumer products, travel, health issues, political issues
- identify privacy & security issues related to social networking and an online presence
- effectively communicate with email utilizing: address books, distribution lists, cc: and bcc: fields, attachments, effective subject lines, spam control
- identify email examples of phishing and other online fraudulent activity
- use folder (directory) management techniques for computer files, email, etc.
- compare and contrast a variety of techniques, hardware and software that can be used to back-up computer data
- describe the importance of operating system and driver patches, and the processes by which these patches are downloaded and installed
- describe anti-virus and anti-malware software, virus and malware risks, scheduled scans and automatic updates

2. Publishing

It is expected that the learner will be able to:

- organize and present a variety of text, graphic and other data following appropriate design and layout procedures
- use templates, "wizards" and/or other productivity tools
- merge documents and integrate tables, charts and graphics
- describe the various file formats used for text, graphics and publication files
- to change file formats where possible
- create, modify, and manipulate digital graphic images (e.g. scan, draw, paint)
- retrieve a graphic/animation/sound file
- apply correct typographic principles involving font selection, point size, justification, kerning, bullets, and headers/footers
- generate cross references, footnotes, indexes and tables of contents

3. Advanced Spreadsheets

It is expected that the learner will be able to:

- enter, format, and edit data
- use and write formulas
- create and modify charts
- create reports
- manage and analyze data
- create macros or use a programming language to customize a spreadsheet
- design a spreadsheet to analyze, interpret, and project outcomes in an applied situation

4. Database Management

It is expected that the learner will be able to:

- design and create flat file and relational databases
- maintain and modify the structure of existing databases
- correctly formulate queries
- create and edit forms
- create and edit reports
- explain various social and ethical issues involving databases

5. Networking

It is expected that the learner will be able to:

- state advantages and disadvantages of using networks
- describe different network configurations (LAN, WAN, etc.)
- describe and diagram different network topologies (point-to-point, star, bus, etc.)
- describe the advantages and disadvantages of different network data transmission media (twisted pair, coaxial cable, optical fiber, and wireless)

- list and describe common network operating systems and network protocols
- describe various server models, including file servers and client/server systems
- list Internet/intranet similarities and differences
- describe management issues, including traffic analysis and security

6. Programming*

*A Note of Caution: The Programming option must not be considered as equivalent to or as a replacement for the Computer Science course articulated at the provincial level.

This option introduces the learner to programming fundamentals. The learner will write programs in a high level language that demonstrates output only and input-process-output operations. While the emphasis of the Computer Science course is software engineering, this option focuses primarily on the elements of programming.

It is expected that the learner will be able to:

- test, debug, and modify program code
- define data types and assign meaningful identifiers to constants and variables
- use input statements to access the keyboard and use output statements to display text and graphics
- use conditional expressions to alter program flow
- use iteration structures to create loops
- write simple procedures
- write programs to demonstrate mathematical processing and simple character and graphic manipulations

7. Graphics

It is expected that the learner will be able to:

- acquire images using a scanner
- operate a digital camera and/or camcorder
- describe important specifications of a digital camera, including megapixels, optical zoom and digital zoom
- transfer digital pictures to a computer
- change the resolution of a digital image
- change the aspect ratio of a digital image
- identify various graphic file formats and perform conversions from one type to another
- crop, resize, and rotate a digital image
- convert a colour image to a greyscale image
- adjust brightness and contrast of a digital photograph
- apply a variety of filter effects to a digital photograph

8. Online Technologies

It is expected that the learner will be able to:

- develop an online electronic portfolio which contains projects that demonstrate proficiency with computer software
- describe the concept of cloud computing, and utilize cloud-based applications such as: word processing, spreadsheets, online collaboration, photo-editing, online storage
- utilize electronic means for time and calendar management, task (to do) lists, user ID management, notes and bookmark (favourite) synchronization
- create and publish a blog entry, which includes text, pictures, and hyperlinks
- add and update an entry on a wiki
- create and publish an online video
- describe software that can be used to remotely access another computer
- describe the process for setting up a home wireless network, configuring encryption, and having computers connect to the network. Connect to wireless networks in other locations
- describe the benefits of Bluetooth technology, examples of Bluetooth devices, and Bluetooth setup procedures
- compare and contrast various mobile computing technologies

9. Web Publishing

It is expected that the learner will be able to:

- create web pages using both a WYSIWYG editor and an HTML editor to present text, graphics and other data using appropriate design and layout
- use fonts, font sizes, headings, justification and tables in a web page appropriately
- recognize the various file formats used for text, graphics, sound, and animation
- create, modify, and manipulate graphic images (e.g. resize, compress, crop, change format)
- locate and retrieve files (graphics, animations, sounds) from the Internet
- explain the implications of copyright copy-left (e.g. GNU GPL, Creative Commons, etc.)
- create hyperlinks on text and graphics
- create internal (relative) and external (absolute) hyperlinks in a web page
- create a navigation scheme to move between web pages on a web site
- use accessibility features (e.g. alt text)
- use meta tags (e.g. description, keywords, title)

Optional:

- use JavaScript in web pages
- use Cascading Style Sheets (CSS)
- use templates, wizards, and other productivity tools in the creation of web pages
- create an image map

10. Digital Art and Graphics

It is expected that the learner will be able to use software to:

- create basic digital shapes
- describe the difference between bitmap and vector images
- select, move, and align objects
- transform objects, including rotation, scaling, and reflecting
- create and format graphic text
- position text on a path
- create colours and gradients
- apply colours and gradients to text and other digital objects
- draw straight and curved lines
- trace a scanned object or digital photograph
- create and manipulate layers

Course Topics:

Topics from a minimum of two of the following categories will be used.

1. Current Technologies

- Efficient web searching and source analysis
- Email communication and security awareness
- Data management and system maintenance

2. Publishing

- Design and organize Word documents
- Integrate multimedia and manage files
- Use advanced document features and editing techniques

3. Advanced Spreadsheets

- Analyze data with charts and reports
- Utilize advanced features (formulas, macros) and customization

4. Database Management

- Design and maintain databases
- Formulate queries
- Address ethical considerations related to data handling

5. Networking

- Understand network configurations and topologies
- Manage network media and protocols
- Ensure network management and security

6. Programming

- Apply programming fundamentals and code structure
- Debug and write procedures

7. Graphics

- Acquire, edit, and enhance images

8. Online Technologies

- Build and manage an online portfolio
- Utilize cloud computing and collaboration tools

9. Web Publishing

- Create web pages and apply design principles
- Implement hyperlinks, navigation, and accessibility

10. Digital Art and Graphics

- Create, format, and manipulate digital graphics

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

Evaluation and Assessments

Assessment Type: Directed/Guided Studies

Assessment Type	% of Total Grade
Journal Entries	10%
Quizzes	25%
Assignments and Projects	65%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=95	94-90	89-85	84-80	79-75	74-70	69-65	64-60	59-55	54-50	<50

Pass requirements: A passing average (50% or higher) in both the theory and practical components.

Evaluation Notes: A grade of "D" grants credit, but may not be sufficient as a prerequisite for

sequential courses.

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.