

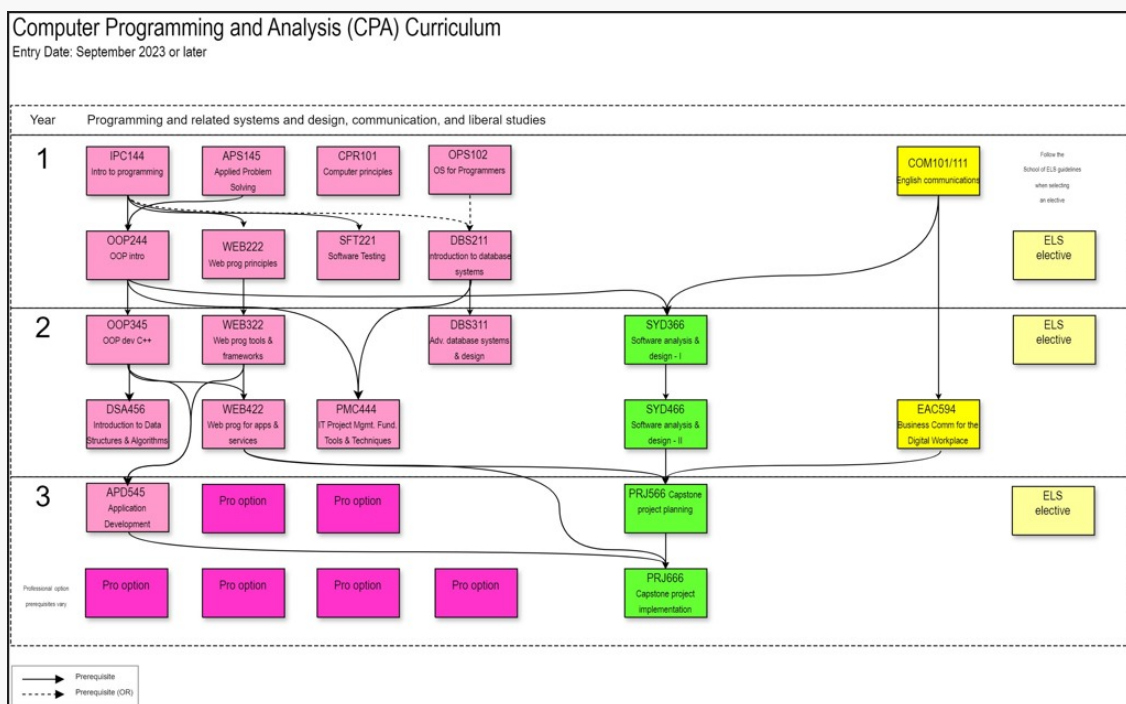
Computer Programming and Analysis (CPA)

Version 12

Published 4/11/2024 by **Bruna Aparecida Alves de Lima** Last updated 12/2/2024 3:14 PM by **Camille Davis**

Program Code:	CPA
Credential Awarded:	Advanced Diploma
Campus:	Newnham
Duration:	3 years (6 academic semesters)
Starts In:	January, May, and September

Program Map



Program Curriculum

Computer Programming & Analysis (CPA)

Semester	Course Code	Course Name	Pre-requisite	Delivery Mode
1	APS145	Applied Problem Solving	None	In Person

1	IPC144	Introduction to Programming Using C	None	In Person
1	OPS102	Operating Systems for Programmers	None	In Person
1	CPR101	Computer Principles for Programmers	None	In Person
1	COM101	Communicating Across Contexts	EAC149, EAP500, COM095, ELI Level 8, or placement based on Seneca College English Skills Assessment	In Person
2	OOP244	Introduction to Object Oriented Programming	IPC144 and APS145	In Person
2	WEB222	Web Programming Principles	IPC144	In Person
2	SFT221	Software Testing	IPC144	In Person
2	DBS211	Introduction to Database Systems	IPC144 or ULI101 or OPS102	In Person
2		General Education Option	None	Online
3	OOP345	Object-Oriented Software Development Using C++	OOP244	FASET Flex
3	DBS311	Advanced Database Systems and Design	DBS211	FASET Flex
3	WEB322	Web Programming Tools and Frameworks	WEB222	FASET Flex
3	SYD366	Requirements Gathering Using OO Models	OOP244 and COM101/111	FASET Flex
3		General Education Option		Online
3	WTP100	Work Term Preparation (Co-op students only)		Online
4	EAC594	Business Report Writing	COM101 or COM111 or equivalent	FASET Flex
4	DSA456	Introduction to Data Structures & Algorithms	OOP345	FASET Flex
4	WEB422	Web Programming for Apps and Services	WEB322 and OOP345	FASET Flex
4	PMC444	IT Project Management Fundamentals Tools and Techniques	DBS211 and OOP244	FASET Flex
4	SYD466	Analysis and Design using OO Models	SYD366	FASET Flex
5	PRJ566	Project Planning and Management	SYD466 and WEB422 and EAC594	Hybrid
5	APD545	Application Development	OOP345 and WEB322	Hybrid
5		General Education Option		Hybrid
5		Professional Option		Hybrid
5		Professional Option		Online
6	PRJ666	Project Planning and Management	WEB422 and APD545 and PRJ566	Hybrid
6		Professional Option		Online
6		Professional Option		Online
6		Professional Option		Online
6		Professional Option		Online

2 Work Terms
(Co-op Students only)

Professional Options - Winter 2025

Semester	Course Code	Course Name	Pre-requisite	Delivery Mode
5, 6	CCP555	Cloud Computing for Programmers	WEB422	Online
5, 6	CVI620	Computer Vision	DSA456	Online
5, 6	DBS501	Stored Procedures Using Oracle's PL/SQL	DBS311	Online
5, 6	GAM536	Game Content Creation	OOP345	Online
5, 6	MAP523	Mobile App Development - iOS	OOP345 and WEB322	Online
5, 6	MAP524	Mobile App Development - Android	OOP345	Online
5, 6	OSD700	Open Source Development Project	OSD600	Online
5, 6	SDR520	Software Design for Robotics Applications	WEB422 and OOP345	FASET Flex
5, 6	SPO600	Software Portability and Optimization	IPC144 and OOP345	Online
5, 6	DEN502	Digital Entrepreneurship for Programmers	EAC594	Online
5, 6	UNX511	UNIX Systems Programming	OOP345 and OPS102	Online
5, 6	ELA521	Ethics, Law and Application Development	DBS211	Online

Program Learning Outcomes

As a graduate, you will be prepared to reliably demonstrate the ability to:

- Identify, analyze, design, develop, implement, verify and document the requirements for a computing environment.
- Diagnose, troubleshoot, document and monitor technical problems using appropriate methodologies and tools.
- Analyze, design, implement and maintain secure computing environments.
- Analyze, develop and maintain robust computing system solutions through validation testing and industry best practices.
- Communicate and collaborate with team members and stakeholders to ensure

effective working relationships.

- Select and apply strategies for personal and professional development to enhance work performance.
- Apply project management principles and tools when responding to requirements and monitoring projects within a computing environment.
- Adhere to ethical, social media, legal, regulatory and economic requirements and/or principles in the development and management of the computing solutions and systems.
- Investigate emerging trends to respond to technical challenges.
- Gather, analyze and define software system specifications based on functional and non-functional requirements.
- Design, develop, document, implement, maintain and test software systems by using industry standard software development methodologies based on defined specifications and existing technologies/frameworks.
- Select and apply object-oriented and other design concepts and principles, as well as business requirements, to the software development process.
- Gather requirements and model, design, implement, optimize, and maintain data storage solutions.
- Integrate network communications into software solutions by adhering to protocol standards.

Degree Pathway Options:

- **Transfer Pathway into Honours Bachelor of Technology - Software Development (BSD)**
- **Transfer Pathway into Honours Bachelor of Commerce - Business Technology Management (BTM)**
- **Transfer Pathway into Honours Bachelor of Data Science and Analytics (DSA)**

Further Information About This Program from Seneca's Website

Student Appeals:

- 1st Informal appeal form

- **INSTRUCTIONS FOR SUBMITTING INFORMAL ACADEMIC APPEALS**
- *2nd* Formal appeal – Seneca forms
- **INSTRUCTIONS FOR SUBMITTING FORMAL ACADEMIC APPEALS**

tags : cpa, scpa