

CPA - Computer Programming and Analysis

Version 9

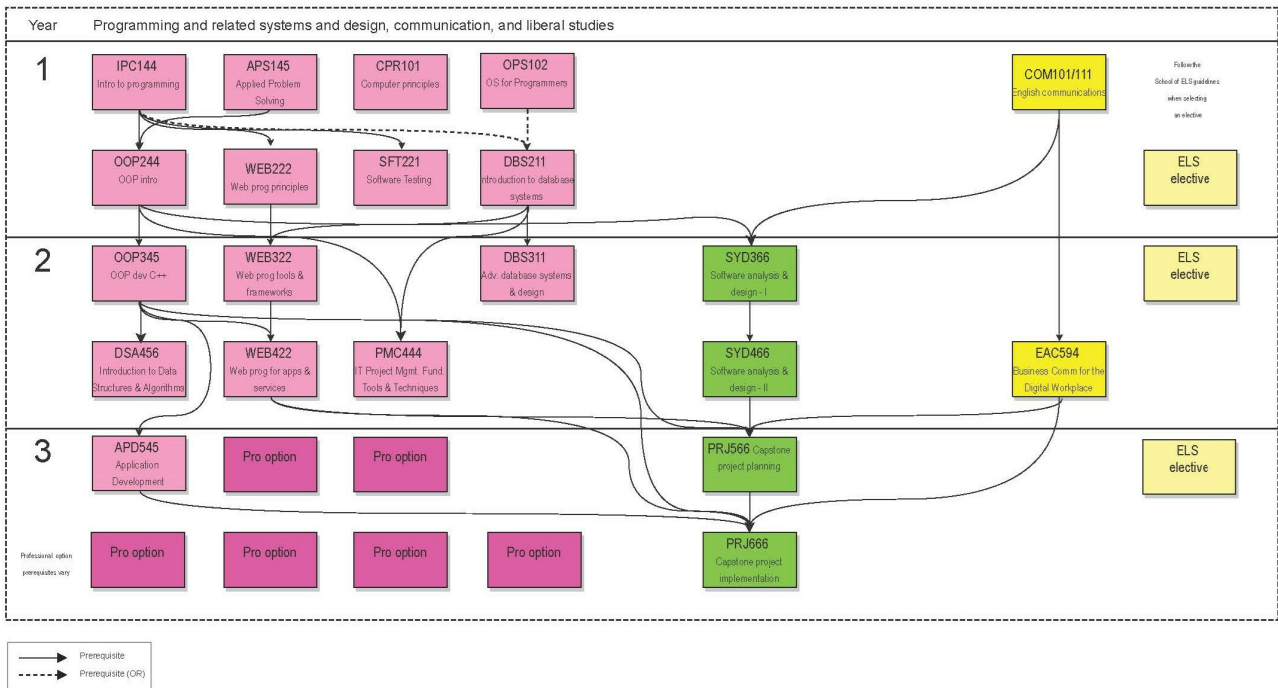
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Program Code:	CPA
Credential Awarded:	Advanced Diploma
Campus:	Newnham & Seneca International Academy, Markham
Duration:	3 years (6 academic semesters)
Starts In:	January, May and September

Program Map

Computer Programming and Analysis (CPA) Curriculum

Entry Date: September 2023 or later



Program Curriculum

Computer Programming - CPA - 24-25			
Semester 1			
Course Code	Course Name	Pre-requisite	
APS145	Writing Strategies	None	
IPC144	Introduction to Programming Using C	None	
OPS102	Operating Systems for Programmers	None	
CPR101	Computer Principles for Programmers	None	
COM111	Communicating Across Contexts	None	
Semester 2			
Course Code	Course Name	Pre-requisite	
OOP244	Introduction to Object Oriented Programming	IPC144 and APS145	
WEB222	Web Programming Principles	IPC144	
SFT221	Software Testing	IPC144	
DBS211	Introduction to Database Systems (Replacing DBS201)	IPC144 or OPS102	
	General Education Course		
Semester 3			
Course Code	Course Name	Pre-requisite	
OOP345	Object-Oriented Software Development Using C++	OOP244	
DBS311	Advanced Database Systems and Design	DBS211	
WEB322	Web Programming Tools and Frameworks	WEB222	
SYD366	Requirements Gathering Using OO Models	OOP244 and COM101/111	
	General Education Course		
WIL Term			
Course Code	Course Name	Pre-Requisite	
CPA331	Computer Programming and Analysis, Co-op	WTP100	
Semester 4			
Course Code	Course Name	Pre-requisite	
EAC594	Business Communication for the Digital Workplace	COM101/ COM111	
Semester 5			
Course Code	Course Name	Pre-requisite	
PRJ566	Project Planning and Management	SYD466, WEB422 and EAC594	
APD545	Application Development	OOP345 and WEB322	
	Professional Options		
	Professional Options		
	General Education Course		
Semester 6			
Course Code	Course Name	Pre-requisite	

DSA456	Data Structures & Algorithms	OOP345	PRJ666	Project Implementation	PRJ566 and EAC594
WEB422	Web Programming for Apps and Services	WEB322 and OOP345		Professional Options	
PMC444	IT Project Management Fundamentals Tools and Techniques	DBS211 and OOP244		Professional Options	
SYD466	Software Analysis and Design - II	SYD366		Professional Options	

Pro-Options - Fall 2024 Offerings		
Course Code	Course Name	Pre-requisite
CCP555	Cloud Computing for Programmers	WEB422
CVI620	Computer Vision	DSA456
DBS501	Stored Procedures Using Oracle's PL/SQL	DBS311
DEN502	Digital Entrepreneurship for Programmers	EAC594
DSA566	Data Structure and Algorithms II	DSA456
ELAS21	Ethics, Law and Application Development	DBS211
GAM531	Game Engine Foundations	OOP345
GAM537	Game Development Fundamentals	OOP345
GPU621	Parallel Algorithms and Programming Techniques	OOP345
MAP523	Mobile App Development - iOS	OOP345 and WEB322
MAP524	Mobile App Development - Android	OOP345
MST300	Introduction to Microsoft Cloud Technologies	WEB322
OSD600	Open Source Development	OOP345 and WEB322
SDR520	Software Design for Robotics Applications	WEB422 and OOP345
SPO600	Software Portability and Optimization	IPC144 and OOP345
UNIX511	UNIX Systems Programming	OOP345 and OPS102
WEB524	Web Programming Using ASP.NET	WEB422

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 BSD: Honours Bachelor of Technology - Software Development

Transfer Pathway into BTM: Honours Bachelor of Commerce - Business Technology Management

Transfer Pathway into DSA: Honours Bachelor of Data Science and Analytics

Further Information About This Program from Seneca's Website

Student Appeals:

- 1st Informal appeal form
 - Link to Students: **INSTRUCTIONS FOR SUBMITTING INFORMAL ACADEMIC APPEALS (sharepoint.com)**
- 2nd Formal appeal – Seneca forms
 - Formal Appeal Form **INSTRUCTIONS FOR SUBMITTING FORMAL ACADEMIC APPEALS**

tags : cpa, scpa