Computer Science and Software Engineering integrated path courses

Course code	Course name	**Undergraduate program** Student must be registered in one of these undergraduate programs		**Graduate program** Courses will count toward one of these graduate programs					
		Computer Science (BCompSc)	Software Engineering (BEng)	Computer Science (MCompSc)	Applied Computer Science (MApCompSc)	Software Engineering (MEng)	Software Engineering (MASc)	Cybersecurity Engineering (MEng)	AI for Systems Engineering (MEng)
COMP 6231	Distributed System Design	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6281	Parallel Programming	✓	✓	✓	✓	✓	✓		
COMP 6311	Animation for Computer Games	✓	✓	✓	✓	✓	✓		
COMP 6321	Machine Learning	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6331	Advanced Game Development	✓	✓	✓	✓	✓	✓		
COMP 6341	Computer Vision	✓	✓	✓	✓	✓	✓		
COMP 6371	Immersive Technologies	✓	✓	✓	✓	✓	✓		
COMP 6381	Geometric Modelling and Processing	✓	✓	✓	✓	✓	✓		
COMP 6711	Computational Geometry	✓	✓	✓	✓	✓	✓		
COMP 6731	Pattern Recognition	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6761	Advanced 3D Graphics for Game	✓	✓	✓	✓	✓	✓		
COMP 6771	Image Processing	✓	✓	✓	✓	✓	✓		
COMP 6411	Comparative Study of Programming Languages	✓	✓	✓	✓	✓	✓		
COMP 6421	Compiler Design	✓	✓	✓	✓	✓	✓		
COMP 6461	Computer Networks and Protocols	✓	✓	✓	✓	✓	✓	✓	
COMP 6521	Advanced Database Technology and Applications	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6591	Introduction to Knowledge-Base Systems	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6811	Bioinformatics Algorithms	✓	✓	✓	✓	✓	✓		
COMP 6361	Numerical Analysis of Nonlinear Equations	✓	✓	✓	✓	✓	✓		
COMP 6641	Theory of Computation	✓	✓	✓	✓	✓	✓		
COMP 6651	Algorithm Design Techniques	✓	✓	✓	✓	✓	✓		
COMP 6661	Combinatorial Algorithms	✓	✓	✓	✓	✓	✓		

COMP 6721	Applied Artificial Intelligence	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6741	Intelligent Systems	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6751	Natural Language Analysis	✓	✓	✓	✓	✓	✓	✓	✓
COMP 6781	Statistical Natural Language Processing	✓	✓	✓	✓	✓	✓		
COMP 6791	Information Retrieval and Web Search	✓	✓	✓	✓	✓	✓		
COMP 6801	Deep Learning	✓	✓	✓	✓	✓	✓	✓	✓
SOEN 6441	Advanced Programming Practices	✓	✓	✓	✓	✓	✓		
SOEN 6751	Human Computer Interface Design	✓		✓	✓				✓
SOEN 6311	Formal Methods	✓		✓	✓				
SOEN 6461	Software Design Methodologies	✓		✓	✓			✓	✓
SOEN 6471	Advanced Software Architectures	✓		✓	✓				
SOEN 6481	Software Systems Requirements Specifications	✓		✓	✓				
SOEN 6861	Services Computing: Foundations, Design and Implementations	✓	✓	✓	✓	✓	✓		
SOEN 6431	Software Comprehension and Maintenance	✓	✓	✓	✓	✓	✓		
SOEN 6491	Software Refactoring	✓	✓	✓	✓	✓	✓		
SOEN 6591	Software Mining and Analysis	✓	✓	✓	✓	✓	✓		
SOEN 6611	Software Measurement	✓		✓	✓				
SOEN 6011	Software Engineering Processes	✓		✓	✓			✓	✓
SOEN 6021	Software Re-engineering	✓	✓	✓	✓	✓	✓		
SOEN 6841	Software Project Management	✓		✓	✓				
SOEN 6111	Big Data Analytics	✓	✓	✓	✓	✓	✓	✓	✓

Note
Computer Science (BCompSc) students can take a maximum of 8 credits in SOEN courses
Software Engineering (BEng) students can take a maximum of 8 credits in COMP courses