

SENG Specialization Updates for Summer 2023

The [specializations](#) available to Software Engineering students will be changing effective May 2023 to reflect new and updated courses, as well as courses that are no longer offered. Here is a summary of the upcoming changes, which include course additions, deletions, and group modifications.

Specializations as of December 2022	Changes effective Summer 2023
<p>– Data mining and analysis, artificial intelligence, and machine learning</p> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • ECE 470 - Artificial Intelligence, OR CSC 421 - Introduction to Artificial Intelligence • ECE 485 - Data Analysis and Pattern Recognition • SENG 474 - Data Mining </div> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • CSC 322 - Logic and Programming • CSC 349A - Numerical Analysis • CSC 425 - Analysis of Algorithms • CSC 445 - Operations Research: Linear Programming • CSC 446 - Operations Research: Simulation • ECE 403 - Optimization for Machine Learning • ECE 471 - Computer Vision </div> </div>	<p>Group 1:</p> <ul style="list-style-type: none"> • Add CSC 431 Machine Learning Theory <p>Group 2:</p> <ul style="list-style-type: none"> • Add <ul style="list-style-type: none"> ○ CSC 402 Systems for Massive Datasets ○ CSC 412 Computing for Cognitive Augmentation ○ CSC 427 Advanced Topics in Bioinformatics ○ CSC 428 Computational Biology Algorithms • Remove CSC 322
<p>– Cyber-physical and smart systems</p> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • CSC 462 - Distributed Computing • ECE 460 - Control Theory and Systems II • ECE 463 - Design and Analysis of Computer Networks </div> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • CSC 454 - Fault Tolerant Computing • ECE 403 - Optimization for Machine Learning • ECE 470 - Artificial Intelligence, OR CSC 421 - Introduction to Artificial Intelligence • ECE 485 - Data Analysis and Pattern Recognition • SENG 422 - Advanced Software Architecture </div> </div>	<p>Group 1:</p> <ul style="list-style-type: none"> • Add CSC 467 Switching, Network Traffic and Quality of Service <p>Group 2:</p> <ul style="list-style-type: none"> • Add ECE 448 Cyber-System Security • Remove CSC 454
<p>– Cybersecurity and privacy</p> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • CSC 429 - Cryptography • ECE 448 - Cyber-System Security • SENG 460 - Practice of Information Security and Privacy • SENG 461 - Network Security </div> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • CSC 463 - Wireless and Mobile Networks • CSC 466 - Overlay and Peer-to-Peer Networking • CSC 467 - Switching, Network Traffic and Quality of Service • ECE 463 - Design and Analysis of Computer Networks </div> </div>	<p>Group 1:</p> <ul style="list-style-type: none"> • Add ECE 406 Applied Cryptography (students can take either ECE406 OR CSC429, but not both) • Remove SENG 461
<p>– Performance and scalability</p> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • CSC 462 - Distributed Computing • CSC 464 - Concurrency • ECE 457 - Parallel and Cluster Computing • SENG 462 - Distributed Systems and the Internet - <i>No Longer Offered</i> • SENG 468 - Software System Scalability • SENG 475 - Advanced Programming Techniques for Robust Efficient Computing </div> <div style="border: 1px solid #ccc; padding: 5px; width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • CSC 454 - Fault Tolerant Computing </div> </div>	<p>Group 1:</p> <ul style="list-style-type: none"> • Remove SENG 462 • Move ECE 457 to Group 2 <p>Group 2:</p> <ul style="list-style-type: none"> • Add <ul style="list-style-type: none"> ○ CSC 402 Systems for Massive Datasets ○ ECE 463 Design and Analysis of Computer Networks ○ CSC 467 Switching, Network Traffic and Quality of Service • Remove CSC 454

<p>- Interaction design and data visualization</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • CSC 411 - Information Visualization • ECE 440 - Human Factors in Engineering • ECE 470 - Artificial Intelligence, OR CSC 421 - Introduction to Artificial Intelligence • SENG 411 - Advanced Methods for Human Computer Interaction • SENG 435 - Computer-Supported Cooperative Work </div> <div style="width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • There are no courses in this group at this time. However, topics courses, directed studies, and technical projects might qualify for this group. Please contact the BSEng advisor for preapproval. </div> </div>	<p>Group 1:</p> <ul style="list-style-type: none"> • Add CSC 412 Computing for Cognitive Augmentation • Remove ECE 440 • Move SENG 435, ECE 470/CSC 421 to Group 2 <p>Group 2:</p> <ul style="list-style-type: none"> • Add CSC 413 Designing Creativity Support Tools
<p>- Visual computing (vision/graphics)</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>Group 1</p> <ul style="list-style-type: none"> • CSC 305 - Introduction to Computer Graphics • CSC 471 - Fundamentals of Computer Rendering • CSC 472 - Fundamentals of Computer Modelling • CSC 473 - Fundamentals of Computer Animation • ECE 471 - Computer Vision </div> <div style="width: 48%;"> <p>Group 2</p> <ul style="list-style-type: none"> • CSC 426 - Computational Geometry • CSC 461 - Multimedia Systems • CSC 475 - Music Retrieval Techniques • ECE 470 - Artificial Intelligence, OR CSC 421 - Introduction to Artificial Intelligence • ECE 483 - Digital Video Processing • ECE 484 - Audio Signal Processing • ECE 486 - Multiresolution Signal and Geometry Processing With C++ • SENG 475 - Advanced Programming Techniques for Robust Efficient Computing </div> </div>	<p>Group 2:</p> <ul style="list-style-type: none"> • Remove ECE 486, CSC 475, ECE 484

Note: Some of the new courses noted above will not be added to the UVic Calendar until September 2023.

- CSC 402 - Systems for Massive Datasets: May 2023 calendar
- CSC 412 - Computing for Cognitive Augmentation: September 2023 calendar
- CSC 413 - Designing Creativity Support Tools: September 2023 calendar
- CSC 427 - Advanced Topics in Bioinformatics: September 2023 calendar
- CSC 428 - Computational Biology Algorithms: May 2023 calendar
- CSC 431 - Machine Learning Theory: September 2023 calendar
- ECE 406 - Applied Cryptography: September 2023 calendar