SEEQ Course Descriptions
(Alphabetical by grade range)
*All courses and instructors are subject to change

OPEN COURSES | GRADE 8 - 12

Applied Psychology
August 9-13 | Grade 8-12

Course Description
Psychology asks “Why do people behave the ways they do?” and applied psychology asks “how can we use our understanding of human behaviour in the real world?” Applied psychology is an interdisciplinary field that informs advertising, business management, counselling, education, politics, product development, social change, and more. In this course, you’ll learn how to study human behaviour and — in true applied psychology fashion — put your knowledge into practice by producing a project on a topic that interests you. In true applied psychology fashion, this course will also be structured in alignment with research that asks “what kinds of class environments and teaching methods promote student engagement and learning?”.

Instructor Biography
Carli is a certified teacher and current career coach with Queen’s University. She has completed a Bachelor of Arts majoring in Psychology at Queen’s before completing her Bachelor of Education and then going on to her Master of Science in Applied Psychology. She has worked for ESU as a student supervisor and is able to relate to all students in elementary, middle, high school and university through her experience and education.

Computer Science: Web Programming
August 9-13 | Grade 8-12

Course Description
Are you looking to expand your knowledge of technology and take your coding skill to the next level? In this course, you will get hands-on experience building your first website. You will learn how to create a website from scratch using HTML and CSS by getting familiar with the fundamental elements of web development. By the end of this course, you will be familiar with the complete website development process. You will also learn how to make your site live and accessible online. If you are considering a possible future in computer science or if you are just curious about the coding world, then this is the course for you!

Instructor Biography
Maram is a PhD student in the School of Computing at Queen’s University. Her research interests focus on Machine Learning, Natural Language Processing, and Software Engineering. A former teacher, Maram has taught computer related courses to undergraduate students. She also has six years of work experience in the software development field. Maram is excited to introduce you to the world of programming.
**Lights, Camera, ACTING!**
*August 9-13 | Grade 8-12*

**Course Description**
Do you love to Perform? Were you born to Act? Join me for an exciting week to explore the fundamentals of acting, techniques, theatre vocabulary, meet great acting teachers and learn from impactful performances. Through games, exercises, readings, reflections, video and discussions, we will dive into the world of acting! Memorize your lines and prepare for your monologue, when you're done this Introduction to Acting course, you will be so ready for your next audition!

**Instructor Biography**
**Melissa M** is part of the faculty of the DAN School of Music and Theatre at Queen’s University. She is an actor, singer, musician, musical director, composer, lyricist and playwright, as well as a passionate educator and fun-maker. She has had the pleasure of performing all across Canada as well as internationally, and has written musicals and shows that have been played all over the world. Melissa is just the most excited to teach acting to young people!

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**Natural Hazards & Disasters: Uncovering the Unknown**
*August 9-13 | Grade 8-12*

**Course Description**
Let’s explore how the earth’s water, land, and air work! How do these forces shape the planet’s natural systems and humanity and create natural disasters? Do they influence human disasters? Throughout the course, students will apply the concepts of geographic thinking and the geographic inquiry process and use spatial technologies to analyze these processes, make predictions related to natural disasters, and assess ways of responding to them. Join us to discover the unknown forces behind natural disasters!

**Instructor Biography**
**Gia** is a certified teacher specializing in Environmental Education. Gia has attended both SEEDS and EMC. We’ve had the privilege of Gia working as a student supervisor and an activities coordinator during the programs we well. Her Master of Education in Environmental and Climate Change has prepared her to deliver this amazing course.
GRADE 8 - 9

Pathology: From DNA to Forensics
August 9-13 | Grade 8-9

Course Description
Do you dream of becoming a Crime Scene Investigator? Want to investigate a mock crime scene? Then this course is for you! You will learn about the human body, diseases, DNA, and genetics through hands-on activities including: a genetics testing lab, dragon genetics lab, blood typing (with simulated blood), and examining plastinated specimens. You will also learn forensics skills such as fingerprinting, and handwriting analysis. Are you ready to solve the case?

Instructor Biography
Dr. Mackenzie Bowman has been coordinating ESU courses since 2010, and holds a PhD in Pathology and Molecular Medicine. She is currently a Senior Scientist in the Clinical and Molecular Hemostasis Research Group at Queen’s University. Instructors for this course are specially selected and supervised by Dr. Bowman.

GRADE 10 - 12

Pathology and Molecular Medicine
August 9-13 | Grade 10-12

Course Description
Have you ever wanted to solve your own diagnostic case or learn how to find your blood type? If yes, then this is the course for you! This course will provide you with a thorough introduction to the field of Pathology – the study of diseases and the structural and functional changes they cause. You will interact with graduate students, professors, and doctors as you learn about genetics, cancer, neuropathology, and even have the opportunity to discuss education and career options.

Instructor Biography
Dr. Mackenzie Bowman has been coordinating ESU courses since 2010, and holds a PhD in Pathology and Molecular Medicine. She is currently a Senior Scientist in the Clinical and Molecular Hemostasis Research Group at Queen’s University. Instructors for this course are specially selected and supervised by Dr. Bowman.
**Theories of our World: Mathematics and Physics**  
**August 9-13 | Grade 10-12**

**Course Description**
Join us and explore Mathematics and Physics! You will monitor and collect data, hypothesize, theorize, and perform mathematical modelling to describe what happened in our experiments. Using analytical techniques and computer modelling students will share their results. We will work to understand the structure of a problem, and then use mathematical tools to prove that a strategy is the optimal solution.

**Instructor Biography**
*Chelsea* is currently a PhD student in the Physics and Engineering Department at Queen’s. She is incredibly passionate about exploration, innovation and imagination in the math classroom.

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**Virus and Disease: Epidemiology**  
**August 9-13 | Grade 10-12**

**Course Description**
How does disease spread and how do we prevent it? In *Virus & Disease*, students will learn how to identify, manage, and respond to new contagious diseases. This course will give you the opportunity to learn about the history of outbreaks, work as a team to manage an outbreak, and engage with your peers to protect yourself and your community from disease!

**Instructor Biography**
*Justine* is currently enrolled in the second year of the Master of Science Program at Queen’s University. She is a proud SEEDS Alumni and consequently having completed her Sociology degree at Queen’s. She is also the current Queen’s University Society of Graduate Professionals President.