

## Course Descriptions

*\*All courses and instructors are subject to change*

Week	Course	Grade
July 20-24	Pathology: From DNA to Forensics	7-8
July 27-31	Foundational Anatomy	7-8
August 3-7	Creative Writing	7-8
	Pathology & Molecular Medicine	9-12
August 10-14	Web Development & Coding	7-8
	Clinical Anatomy	9-12
August 17-21	Writing Compelling Fiction	9-12

### Pathology: From DNA to Forensics

July 20-24 | Grade 7-8

#### Course Description

Do you dream of becoming a Crime Scene Investigator? Want to investigate a virtual crime scene? Then this course is for you! You will learn about the human body, diseases, DNA and genetics through demonstrations and activities including: a DNA extraction, dragon genetics lab, and blood typing. You will also learn forensics skills such as fingerprinting, blood splatter analysis, 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.

## Foundational Anatomy

July 27-31 | Grade 7-8

### Course Description

Learn all about the human body, inside and out! Each day, you will review one of the five major systems of the body: musculoskeletal, cardiovascular, respiratory, nervous, and gastrointestinal. Throughout the week, you will work with online models of specimens, engage with classmates to solve anatomical mysteries, and have access to exclusive video and lecture content developed by highly-regarded anatomists at Queen's. Most importantly, you will be exposed to a challenging and engaging learning environment in which you will take your first steps in becoming an expert in anatomy!

### Instructor Biography

Instructors for this course are graduate students studying and working in the Department of Biomedical Science at Queen's University. Many of them are currently completing their Master's degree in Anatomical Science at Queen's.

## Creative Writing

August 3-7 | Grade 7-8

### Course Description

Do you aspire to write original stories that take readers to exciting new worlds or help them discover valuable life lessons? Do you dream of writing the next *Hunger Games*, *Percy Jackson*, or *Harry Potter*? This course shows you the secrets to creating great stories, including how to find and develop story ideas, create memorable characters, build an emotional roller coaster of a plot, design a story world, and write your adventure with flair.

### Instructor Biography

**Glen** has been a freelance writer since 1999 and has been instructing with ESU since 2013. He is the author of the award-winning middle-grade novel, *Dancing on the Inside*, and currently teaches creative writing at St. Lawrence College in Kingston, Ontario.

## Pathology & Molecular Medicine

August 3-7 | Grade 9-12

### Course Description

Have you ever wanted to solve your own diagnostic case or learn about 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 learn about genetics, cancer, neuropathology, and 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.

## Web Development & Coding

August 10-14 | Grade 7-8

### Course Description

Have you ever wondered how to create a website and publish it online? Are you looking for an opportunity that opens the programming door to you? Are you ready for a fun and impactful web development experience? If yes, then this is the course for you! Learn the basic techniques to build your first website and get familiar with the most up-to-date web programming languages through hands-on sessions. Get ready for this crash course in coding!

### 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!

## Clinical Anatomy

August 10-14 | Grade 9-12

### Course Description

Have you ever considered a career in medicine, nursing, physical therapy or in the field of healthcare in general? Are you interested in the world of human health as it relates to the structure of the body? Welcome to clinical anatomy! Together, we will learn about anatomical systems and the fascinating ways in which they can malfunction. Through a variety of clinical cases, readings, lecture content, videos, and games, you will learn how anatomy plays a critical role in diagnoses and treatments. You will be taught by experienced anatomists at Queen's University to expand your understanding of human anatomy. Come explore your interests with like-minded peers and see where anatomy can take you!

### Instructor Biography

Instructors for this course are graduate students studying and working in the Department of Biomedical Science at Queen's University. Many of them are currently completing their Master's degree in Anatomical Science at Queen's.

## Writing Compelling Fiction

August 17-21 | Grade 9-12

### Course Description

You have imagination, passion, a love of stories, and you are great with words – so how do you take your writing to the next level? In this course, you will discover the secrets to writing stories that stir readers' emotions and take them on a page-turning and meaningful adventure. You will learn the essential elements of great plots as well as how to develop original story ideas, design memorable characters, hook your readers, and flesh out your hero or heroine's inner journey. Plus, short cuts for improving your writing style. Best of all... you will have the opportunity to interact with other young writers through online activities in which the stakes are low but the creativity is high.

### Instructor Biography

**Glen** has been a freelance writer since 1999 and has been instructing with ESU since 2013. He is the author of the award-winning middle-grade novel, *Dancing on the Inside*, and currently teaches creative writing at St. Lawrence College in Kingston, Ontario.