

**EXPERIENCE
UNIVERSITY**

FOR GRADE 5 - 12 STUDENTS

2020

**Enrichment Mini Course
(EMC) Program
Course Descriptions**



Queen's
UNIVERSITY

esu.queensu.ca

ESU
enrichment studies unit
EST. 1987

(Alphabetical by course title)

**All courses and instructors are subject to change*

Culture & Characters: 初学者中文

Course Description

Did you know that one in every five people in the world speaks Chinese? Can you pronounce a single syllable “ma” in four distinguished tones, which can mean “mother”, “numb”, “horse”, “to scold”, just to name a few? Join us for a crash-course in Mandarin Chinese designed for absolute beginners. By the end of this course, you will be able to understand the Chinese pronunciation, writing, and grammar system. You will also be able to conduct daily conversations, write at least 100 Chinese characters, pronounce any Chinese word, and even type Chinese characters on your cell phone. If you are looking to develop your skills in listening, speaking, reading, and writing, while learning about traditional and modern China, then this is the course for you!

Instructor Biography

Shuyuan is a graduate student in the Faculty of Education at Queen’s University. She was curriculum and instruction director at Chinese Language Academy of Los Angeles, where she did research and development on gamified online and technological applications for language teaching. Her research interests focus on second language acquisition, literacies study, multimodality, and Chinese as a second language.

Discover the Coding World: An Introduction to Web Programming

Course Description

Did you know that web presence is essential for the majority of businesses nowadays? Are you looking to learn a marketable skill while exploring your creative side? In this course, you will have the opportunity to develop a complete website, from learning how to plan and design an effective web page using the latest web programming languages and standards like HTML and CSS, to enhancing your website through text formatting, graphics, and multimedia. This hands-on course will challenge you to discover and explore the coding world!

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 undergraduates 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.

Engineering: Hyperloop Vehicle Design

Course Description

Tesla and SpaceX developed it, now you can try to build it! In this course, you will work in an engineering team to build a prototype Hyperloop model. Throughout the week, you will explore engineering design and magnetic levitation, in addition to practicing skills such as programming, CAD software, and circuitry. You will look at topics related to a variety of disciplines including electrical engineering, mechanical engineering, and engineering physics. By the end of the week, you will integrate these components into a single design and have the opportunity to showcase your results to the other teams.

Instructor Biography

ESU has been collaborating with Connections: Queen's Faculty of Engineering and Applied Science Educational Outreach Program, since 2014. Instructors for this course are specially selected and supervised by the Manager of Connections.

Engineering: Prosthetic Limb Design

Course Description

In this course, you will be introduced to the multidisciplinary nature of biomedical engineering. Topics will integrate learning concepts from electrical and computer engineering in addition to the foundations of biomechanical engineering and medical research. You will learn about the biomechanics of a prosthetic arm, how to use 3D CAD for modeling and prototyping, the process of 3D printing within the prosthetic industry, electromyography, and basic Arduino programming. You will also learn the cornerstones of the engineering design process and apply it to your project development.

Instructor Biography

ESU has been collaborating with Connections: Queen's Faculty of Engineering and Applied Science Educational Outreach Program, since 2014. Instructors for this course are specially selected and supervised by the Manager of Connections.

Human Anatomy

Course Description

Do you want to get up close and personal with human anatomy? In this course, you will start by reviewing the five major systems of the body, including the musculoskeletal, cardiovascular, respiratory, nervous, and gastrointestinal. You will also get hands-on experience working with cadaveric specimens and plastinated models, and have an exclusive opportunity to visit the state-of-the-art Anatomy Museum and Laboratory at Queen's to explore the human body, inside and out! Most importantly, you will be exposed to a challenging and engaging learning environment, led by highly regarded experts in the field of anatomy at Queen's.

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.

Kinesiology & Health: The Human Body, Mind, and Performance

Course Description

In this course, you will learn about the human body in motion by studying the effects of physical activity on health and performance, the physiological factors affecting the body during movement, and important concepts in sport psychology. You will get hands-on experience practicing taping techniques while learning about common injuries that occur in sports. Concepts involving how certain social factors can influence our physical and mental health, as well as performance, will also be discussed. Most notably, you will have an exclusive opportunity to visit the School of Kinesiology and Health Studies' Revved Up Exercise Program, where you will learn about how individuals/persons with a mobility impairment maximize function.

Instructor Biography

ESU has been collaborating with the School of Kinesiology and Health Studies, since 2017. Instructors for this course are specially selected and supervised by the Internship Coordinator at SKHS.

Pathology and Molecular Medicine

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. You will also extend your learning in the state-of-the-art Queen's University Anatomy Museum and Clinical Simulation Centre.

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.

Stories & Creation: Making Art History

Course Description

Are you interested in learning about pop culture, outdoor art, non-western art, and art made by marginalized voices? In this course, we will combine the rich stories of art throughout history with hands-on engagement and art-making to deepen your appreciation for art in the world around you. Venturing out into Kingston, we will explore the art that this city has to offer. By the end of the course, you will have the opportunity to show off what you have learned by creating an exhibition of your art that you have made along the way. If you have ever looked at a piece of art and thought, "I could make that", here is your chance to try!

Instructor Biography

Delaney is an Art History graduate student at Queen's University. Her research at currently focuses on Netherlandish butchery still-life painting. She has a background in drawing and painting, appearing in art shows in Montreal. Delaney has worked with the Southwestern Ontario Suzuki Institute's youth Operetta program in production design, and spent time volunteering with various galleries.

Writing Compelling Fiction

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. All taught through a combination of collaborative games, creative exercises, lecture, and self-directed writing opportunities.

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.