Computer Pathways
Queen Elizabeth High School

Teacher: Mr. Mercer
Rm: Innovate Lab
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Cloud Platform Connections

- School Zone: Gmail
- Google Classroom
- GitHub, GitHub Classroom (Programming Version Control and Portfolio)

Course Description for Computer Pathways

Computer Pathways is a five-credit course mainly focused in Networking & Cisco Academy; however, students are able to choose project-based learning through an entrepreneurial model. In Networking & Cisco Academy, students learn and experience how to build a computer with hardware and software, network machines, and route Internet traffic. Students will have the opportunity to write industry-level exams through Cisco Academy and CompTIA. In Project-based Learning, students use other parts of Mr. Mercer's Cisco Academy to learn a variety of computer science, operating systems, hardware, and their associated software. Or, students are able to develop a semester plan through an entrepreneurial model intending to study their passions by using various online materials, courses, or MOOCs. This course is designed to prepare students for a career in computer science, electrical engineering, electrical engineering technologies, computer engineering, Internet Technologies, or robotics.

Students are expected to choose a course progression or plan, main project (or series of projects), and develop the associated skills and attitudes necessary for success. This type of learning is not meant for everyone and, for those that are suited, is incredibly powerful.

The following Streams (Alberta Program of Studies) will be used for this 5 credit course:

- Networking: http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=63620#
- Electro-Technologies: http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=665215#
- Computing Science Education: http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=74838#
- Human & Social Services: http://www.learnalberta.ca/ProgramOfStudy.aspx?lang=en&ProgramId=608655#

Specific Course Progressions and Credits will depend on student's experience

Note: Courses may change depending on student's experience and involvement

Assessment

Assessment Note: All students will be assessed according to the Alberta Curriculum of Studies for the courses they choose. Instruction will consider Advanced Placement Computer Science Principal's Digital Portfolio, Computer Science A's Labs and both final exams. In this way, students who want to prepare for Advanced Placement assessment have that opportunity.

For Edmonton Public Schools and Queen Elizabeth High School Assessment Policy, please refer to Reference Guide to Student Assessment, Achievement & Growth 2017-2018 (on School Zone and Website).

Assessment will be experienced in three general ways named "as", "for", and "of" learning. Each method focuses students learning with reflection, review, practice, correction, and many opportunities for students to demonstrate their learning. Both "as" and "for" learning include tasks, activities, practice problems, challenges, and reflection that includes interaction with the teacher. These methods are understood as low-risk in terms of grading practice. "Of" learning includes timed challenges where students demonstrate their learning at that point, summatively. These are mandatory assessments that evaluate computational thinking with technical reading and writing. Please see Mr. Mercer if you have further questions.

This course consists of the five 1 credit courses. Each one credit course will have its own final grade determined through a combination of classroom observation, interviews, and items submitted for grading. While Mr. Mercer will be grading for certain items please remember, what seems like an "epic fail" can demonstrate an extraordinary amount of learning. Students are responsible for assisting Mr. Mercer in understanding this.

Graduation Course Credit and Industry Certification for Post-Secondary Education and Employment Application

A number of options exist for students depending on their choice of project. See Mr. Mercer for more details.

Networking Projects and Cisco Academy

- All NET Grade 12 credits are accepted at McEwan University
- Certificates of Completion
- Awards of Merit

Computer Science Projects

- Industry-level language-specific Certificates of Completion
- Computer Science 30, Advanced Placement Computer Science Principles, and Advanced Placement Computer Science A are all recognized throughout North American Universities, Colleges, and trade schools for application
- For example: University of Alberta

Computer Science Principles: Comput 101
(General Computer Class in Various Faculties)
Computer Science A: Comput 174

Robotics and Mentoring Projects: portfolio development and application

School Resources

- Windows Computer or Linux Computer
- Internet & infrastructure, cables, and other hardware to create a computer lab
- Resources to understand Computer Literacy needed for course completion
  Note: additional resources available based on student interest

Student Resources

- Raspberry Pi Computer Development Kit (See Mr. Mercer for specific details)
  Note: this resource is intended for an entire high school experience through Computer Science, Robotics, Networking, Project-based learning, and other disciplines
- Earphones or earbuds (for listening to audio of tutorials or projects)
  Note: this is not meant for entertainment purposes, discuss options with Mr. Mercer
- Virtual or Physical binder, paper (lined and blank), pens, pencils, highlighter

Computers and School Technology, Calculator, Cell Phone, & Other Device Policy

- On-task engagement is mandatory. Be engaged with your tasks at all times.
  Discuss all time & attention management issues with Mr. Mercer
- No devices are allowed during timed assessments unless the student is complete
- Cell Phones will not be visible in the Computer Lab unless use is directed by Mr. Mercer
  For Example, Mr. Mercer does not text during class and makes all communication before class, during breaks, and at the end of the school day. Any exceptions are discussed with the class.
- Any device to bring computational knowledge and other associated computer science ideas is welcome, especially when it is shared! Discuss this use with Mr. Mercer first.

Classroom Behavior Expectations

- Arrive prepared to learn with all materials on time; Mr. Mercer will be ready to teach.
- Engage with all activities trusting you will benefit from the lesson;
  Mr. Mercer will engage with your questions, misunderstandings, & success.
- Persevere with the entire lesson, everyday; Mr. Mercer will and desires your success.

Welcome to
Computer Pathways