

My Experience with Killarney Secondary's IT Department

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Introduction

I am currently an undergraduate majoring in Computer Science. Since graduating from Killarney Secondary School in 2017, I've had the chance to study and work on a variety of systems and technologies, such as:

- Adversarial game AI
- Distributed caching
- Texture filtering for 3D rendering

During my time at Killarney I took courses in the Information Technology (IT) department from 2013 to 2017. While my understanding is that the course offering has changed somewhat since then, the particular courses I took were:

- IT 10
- Programming 11, 12, and 13 (independent study)
- Networking 11
- Linux 12

From a high level, my experience was that these courses were quite accessible (i.e., no knowledge required beyond the prerequisite courses), but at the same time encouraged and offered resources for those who were more interested to “play” with the subject matter deeper. I think that for high school elective courses, this is an excellent structure since it allows the student to choose for themselves how much they would like to specialize, while also ensuring sufficient exposure to get a feeling for the subject.

Examples of topics

Personally I enjoyed the IT/Programming course line the most (today I believe this corresponds to the Programming and Computer Science courses). To give an idea of the topics that were covered, in my recollection they included (non-exhaustively):

- Hardware basics
- Input/Output
- Basic control flow (conditionals, loops)
- Boolean operators
- String processing, arrays
- Sorting algorithms
- File processing

- Basic ciphers
- Web development (HTML, CSS, JavaScript, PHP, and MySQL)

In the offerings I took, the introductory courses focused on Python, the intermediate course moved to web development topics, and the grade 12 courses switched to C++. Looking back, I think this choice of topics offers a good breadth in terms of exposure to different specializations within CS and IT. My understanding is that recently the core CS courses have been made separate and parallel to the web development course, which is a logical improvement. It is also my understanding that topics such as recursion and Big O notation have been added to the syllabus, which is a great addition for preparing for university material.

Teaching

Each of the courses listed previously were taught (when I took them) by Ms. Ali, and therefore I will comment on her teaching specifically. Ms. Ali's teaching style is both precise, and at the same time has the right amount of intuition so as to be accessible to a highschool audience. Often, the style of her lessons consist of a lecture or demonstration of the topic at hand, followed by a description or demo of an assignment or project, and then students are given independent class time (depending on the size of the assignment, the rest of class to a few days) wherein they are encouraged to think, discuss ideas, learn the topic, ask questions, and ultimately complete the assignment/project. Sometimes, quizzes are used to gauge understanding. I think that this method of instruction works well for a few reasons:

- First and foremost, it gives the student the opportunity to take (a safe amount of) responsibility over inquiry. The lessons give sufficient instruction, but programming – as with any large skillset or field of study – requires the practitioner to be an active critical thinker. Using a larger assignment-based format of learning as opposed to, for example, small take-home problem sets, is a good way of reflecting the fact that programming is a craft of creating under logical constraints.
- Second, avoiding excessive focus on rigour/formality in the early stages of learning allows the student to experiment and develop intuition.
- Finally, this style of instruction encourages the student to really play with the subject, and offers an opportunity to actively do so with one's peers while having guidance from a teacher.

Some of the most fun and memorable parts of class for me personally was completing the assignments early and using the extra time to play around with how they could be extended or modified. In my recollection of highschool these courses were some of the most enjoyable parts of the experience.

Enrichment and Clubs

Having discussed with peers in post-secondary, I believe that Killarney's course offerings in the technology space are truly uniquely wide in the range of topics available to study. It is clear to me as a former student that the IT department goes the extra mile to support and improve these programs. Furthermore in my experience, it is very supportive of students who want to go further in the field. To give a personal example: in my last school year, a number of students were interested in an additional independently directed studies course. Ms. Ali agreed to run this course (Programming "13"), and in my case I had the opportunity to use a school block (for credit!) preparing for programming competitions, studying algorithms which caught my interest, and working on projects. Another example I could give is the various field trips that were arranged for Linux 12, where we attended LinuxFest Northwest in Bellingham and gave presentations at the Vancouver Linux Users Group.

When taken together with the broader context of the department's class offerings and clubs sponsored, I feel that these instances exemplify a strong commitment to the enrichment of its students.

Regarding a slightly different aspect of school – as with most elective subjects, typically the peers that one meets in the IT department’s courses and clubs have overlapping interests. For those who decide that CS/IT is something they wish to pursue further, taking these classes and joining related clubs offers the opportunity to meet friends who also enjoy the subject. In my case, joining the Programming Club gave me the opportunity to learn from peers in higher grades, and later to mentor those in lower grades. While I was a member, the Programming club focused on programming competitions and occasionally finishing homework problems. For me, working on competition problems after school at the club was a great way to gain exposure to more advanced topics and to share an enjoyment in programming with others. Mentoring others also had many benefits – teaching an idea requires a higher degree of understanding (versus, for example, test taking), and also exposes oneself to different perspectives in thinking.

Conclusion

Ultimately looking back I had quite a few valuable experiences and opportunities from Killarney’s IT department. For these reasons, I would recommend students who are both motivated and have a strong interest in computers and/or technology to give strong consideration to the courses and activities hosted by Killarney’s IT department.