

Exploring Computer Careers

Three Computer Careers

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Computer Programs Manager

❖ Brief Description:

- This is the manager of the computer programmers in a company, be it public, or private. Their job is to manage and assess teams of computer programmers in the development and implementation of various computer softwares.

❖ Skills and Work Habits:

- Communication, analysis, and management skills are all necessary for a computer programs manager. Reliability, organization, and teamwork are needed work habits for a computer programs engineer.

❖ Salary and Outlook:

- In Toronto, over 20,000 people work in this profession, and the yearly salary is from \$52,000-\$148,000. The outlook for this career is good. This is due to the retirements of older individuals in the manager job positions and the new positions that will open due to employment growth.

Education Required - Computer Programs Manager

Example Education Path: McMaster Computer Science

❖ Entrance Requirements:

- Admission Grade Average: 90-95%
- Required Courses: Six “4U” courses including: English, Calculus and Vectors, and 2 Sciences.

❖ Tuition:

- ~\$10,000/year for tuition, including personal costs, it's ~\$20,000/year.

❖ Program Length:

- The undergrad is four years, to get a masters in computer sciences, it's an extra two years.

❖ First Year Courses:

- Calculus for Science(1, and 2), Linear Algebra 1, Engineering Mathematics (1, 2a, and 2b).

Computer Software Engineer

❖ Brief Description:

- Software engineers create and design a multitude of different softwares. They troubleshoot, maintain, and upgrade application softwares. Their jobs are either in the public or private sector, but they can also be self-employed.

❖ Skills and Work Habits:

- Program writing, analysis, and management skills are paramount skills for a software engineer. Working independently, reliability, and organization are good habits for a software engineer.

❖ Salary and Outlook:

- Approximately 17,000 Torontonians work in this profession. The salary range for this profession is from \$52,000-\$101,000. The outlook is great for this career there are many vacant job positions and a high demand, especially in Toronto.

Education Required - Software Engineer

Example Education Path: UofT Computer Science

❖ Entrance Requirements:

- Admission Grade Average: 90% or higher
- Required Courses: Six “4U” courses including: English, and Calculus.

❖ Tuition:

- ~\$13,000/year for tuition, including personal costs, it's ~\$23,000/year.

❖ Program Length:

- The bachelor degree for computer science at UofT is four years.

❖ First Year Courses:

- Intro to Computer Programming, Analysis 1, Calculus (1, 2a, and 2b), Intro to Computer Science, Reasoning for Computer Science, Intro to the Theory of Computation

Computer Systems Analyst

❖ Brief Description:

- Computer system analysts develop a multitude of plans and procedures, analyze system requirements, and advise clients on a variety of issues related to system information. Computer Systems Analyst jobs are either in the public or private sector, but they can also be self-employed.

❖ Skills and Work Habits:

- Communication, information handling, and analysis skills are crucial for a computer systems analyst. Reliability, organization, and teamwork are some work habits needed to be a productive computer systems analyst.

❖ Salary and Outlook:

- In Toronto, over 64,000 people work in this profession, and the range in yearly salary for this profession is from \$46,000-\$124,000. The outlook for this career is great and stable. This is due to new positions that will open due to employment growth, and a low rate of employees who had this job are now unemployed.

Education Required - Computer Systems Analyst

Example Education Path: Waterloo Computer Science

❖ Entrance Requirements:

- Admission Grade Average: 95% or higher for higher chance of acceptance
- Required Courses: Six “4U” courses including: English, Calculus, and Advanced Functions.

❖ Tuition:

- ~\$17,000/year for tuition, including personal costs, it's ~\$27,000/year.

❖ Program Length:

- The undergrad is four years, to get a masters in computer sciences, it's an extra two years.

❖ First Year Courses:

- Calculus for Science(1, and 2), Linear Algebra, Algebra, Designing Functional Programs, Algorithm Design, Data Abstraction

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