TOP 10 REASONS TO MAJOR IN COMPUTING

1. Computing is part of everything we do!

Computing and computer technology are part of just about everything that touches our lives from the cars we drive, to the movies we watch, to the ways businesses and governments deal with us. Understanding different dimensions of computing is part of the necessary skill set for an educated person in the 21st century. Whether you want to be a scientist, develop the latest killer application, or just know what it really means when someone says "the computer made a mistake", studying computing will provide you with valuable knowledge.

2. Expertise in computing enables you to solve complex, challenging problems.

Computing is a discipline that offers rewarding and challenging possibilities for a wide range of people regardless of their range of interests. Computing requires and develops capabilities in solving deep, multidimensional problems requiring imagination and sensitivity to a variety of concerns.

3. Computing enables you to make a positive difference in the world.

Computing drives innovation in the sciences (human genome project, AIDS vaccine research, environmental monitoring and protection just to mention a few), and also in engineering, business, entertainment and education. If you want to make a positive difference in the world, study computing.

4. Computing offers many types of lucrative careers.

Computing jobs are among the highest paid and have the highest job satisfaction. Computing is very often associated with innovation, and developments in computing tend to drive it. This, in turn, is the key to national competitiveness. The possibilities for future developments are expected to be even greater than they have been in the past.

5. Computing jobs are here to stay, regardless of where you are located.

There actually are more computing jobs than qualified people to fill them in the United States. U.S. IT employment was 17% higher in 2004 than in 1999. The Bureau of Labor Statistics says computing has the greatest potential for new jobs through 2014. Yes, some IT jobs have gone overseas. If you consider the expected growth in computing, it's easy to see that companies simply need more talent. Don't miss out on pursuing the large number of open positions available right now, here in the United States.

6. Expertise in computing helps you even if your primary career choice is something else.

Having a computing major will provide you with a foundation of knowledge, problem solving and logical thinking that will serve as a competitive advantage to you in your career, in whatever field you choose.

7. Computing offers great opportunities for true creativity and innovativeness.

Creating high-quality computing solutions is a highly creative activity, and computing supports creative work in many other fields. The best solutions in computing exhibit high levels of elegance and beauty.

8. Computing has space for both collaborative work and individual effort.

Computing is often about being part of a team that requires people with many different kinds of skills. Yet there is also plenty of space for individual flair and imagination.

9. Computing is an essential part of well-rounded academic preparation.

An increasing number of universities and employers see successful completion of a computer science course as a sign of academic well-roundedness.

10. Future opportunities in computing are without boundaries.

Computing is one of those fields where it is almost impossible to predict what will happen next. This is why we cannot even begin to imagine all the ways that you can make a contribution to it and it can make your life's work exciting and real.

CAREER OPPORTUNITIES IN COMPUTER SCIENCE

Information and communication technology (ICT) has created new jobs titles such as computer operators, computer technicians, system analysts, computer programmers, software engineers, computer engineers, information system manager, data base administrators, computer trainer, website administrators, computer graphic designers and network administrators.

Below, we explain some responsibilities of these professionals

<u>Computer Operators</u>

Responsibilities include;

- Entering data into the computer for processing
- Keeping up – to – date records (log files) of all information processing activities

<u>Computer technicians</u>

Since computers require regular maintenance, upgrading as well as emergency repairs, the demand for computer technicians continues to grow as more computerized workplaces and homes come up.

Some responsibilities of a computer technician are:

- Trouble shooting computer hardware and software related problems

<u>Trouble shooting.</u>

Troubleshooting is a logical, systematic search for the source of a problem so that the product or process can be made operational again.

- Assembling and upgrading computers and their components
- Ensuring that all computer related accessories such as printers, scanners modems storage media and other devices are in good working condition
- Install new programs needed by the company / organization

<u>Systems analysts</u>

This is a person who is responsible for analyzing a company's needs or problems and then designs and develops a computer based information system.

This person should have experience in problem solving, good communication skills, must have good business knowledge about the hardware, software and programming

Some responsibilities of a systems analyst include

- Reviewing the current manual information system and making recommendations on how to replace it with a more efficient one.
- Working with programmers to construct and test the system
- Co-coordinating training for users of the new system

Computer programmers

Large organizations such as insurance companies, banks, manufacturing firms and government agencies hire programmers to work together with system analyst in order to;

- Write in house application programs or systems programs
- Customize commercial applications to suite the organization needs
- Test, debug, install and maintain programs developed or customized

Define the following computer terms;

(i) Debugging
(ii) Installing hard ware /software
(iii) Computer bug

Debugging

In computers, debugging is the process of locating and fixing or bypassing bugs (errors) in computer programs.

Installing hardware/software:

Installing usually refers to putting software on a computer (install the software), or adding hardware components to your computer (install the hardware).

Software engineer

A software engineer is one who is skilled in software development and technical operation of computer hardware.

Some of the responsibilities of software engineers are;

- Developing system and application software
- Developing user and technical documentation for the new software
- Maintaining and updating the software to meet day to day requirements

Computer engineer

Since computers are electronic devices, hardware designers must be good in electronic engineering.

Some of the responsibilities of computer engineers include;

- Design and develop computer components such as storage devices, motherboards and other electronic components
- Determine electronic power requirements for each component
- Design and develop engineering and manufacturing computers controlled devices such as robots, ATMs etc
- Re-engineer computer components to enhance its functionality and efficiency

Information systems manger

The information systems manager controls, plans, staffs, schedules and monitors all the activities of the ICT department in the organization.

Other responsibilities of an information system manager include;

- Making sure that all tasks in the IT departments are done correctly and on time in order to support business planning, control and decision making processes
- Preparing budgets for the department
- Keeping the department inventory records up –to – date
- Managing the Human recourse within the department

Database administrator

The major purpose of computerizing organizations or institutions is to store data in an organized way for easy access, retrieval and update. The organization requires a person who should be responsible for updating records in an information system database.

Roles of a database administrator are

- Designing and developing database applications for the organization
- Setting up security measures needed to control access to data and information
- Keeping the database up to date by adding new records, modifying or deleting unnecessary records

Computer trainer

Due to dynamic nature of computers and information technology, there is a high demand of qualified ICT trainers.

Roles of an ICT trainer are;

- Training people on how to use various application programs
- Developing training reference material
- Guide learners on how to acquire knowledge through carrying out research
- Advising the learners on the best career opportunities in the broad filed of ICT
- Preparing learners for ICT examinations

Web administrators / webmasters

Internet is one of the areas of information and communication technology that has drawn the interest of most people. These people are able to exchange messages, search for information and business through the internet.

Different organizations hire the services of a web developer who is given the role of the company's web administrator also referred to as a webmaster to offer them the following services:

- Developing and testing websites
- Maintaining , updating and modifying information on the websites to meet new demands by the users
- Monitoring the access and use of internet connection by enforcing security measures
- Downloading information needed by the organization or institution from internet websites