Information Technology

IT Specialist to the Rescue

Skills
- Technical
- Detail-oriented
- Energetic
- Personable
- Communication
- Analytical
- Logical
- Creative
- Patience

E-mail, personal computers, the Internet: These things make your life simpler by enabling faster communication, providing tools for more effective work, and giving you access to vast information with the click of a mouse. They also introduce a risk factor that isn’t totally within your control: If your computer fails or the network connection goes down, you lose time and possibly money.

That’s where information technology (IT) specialists come in. Information technology brings you the information and applications, such as word processing, spreadsheet, and presentation software, that office workers everywhere rely on to do their jobs. IT specialists create such products and set up and maintain such systems. Their work varies widely: They upgrade your computer software; get your office computer network, or your computer, up and running again after it crashes; set up and maintain the servers on which your company’s internal applications run; create and customize the software products you use; build websites; and build and maintain the databases that you rely on to gather information to serve your customers.

Many IT jobs are highly specialized, focusing on a small aspect within the grand design of a company’s network. You may associate IT with technology companies, but nearly all businesses—from nonprofits to investment banks—have an IT staff to remedy everyday computer problems and maintain and upgrade systems. IT professionals wear many hats and go by different names, depending on their area of expertise—engineer, programmer, website producer, consultant, and network administrator, to name a few.

But no matter what job they do, all IT professionals focus on improving the usability and efficiency of technological systems and processes. Their goal is a smoothly functioning computer network—free of bugs, glitches, and interruptions—that provides an effective flow of information so the company can keep on improving its work processes, customer retention and acquisition, and other aspects of its business.

The importance of the IT professional’s role cannot be overstated as technology continues to automate, accelerate, and connect the global marketplace. IT professionals are at the forefront of making businesses faster and more efficient.

FAST STATS

<table>
<thead>
<tr>
<th>Position</th>
<th>Median Salary</th>
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<tbody>
<tr>
<td>Computer Programmer</td>
<td>$74,690</td>
</tr>
<tr>
<td>Systems Administrator</td>
<td>$70,930</td>
</tr>
<tr>
<td>Database Administrator</td>
<td>$74,290</td>
</tr>
<tr>
<td>Web Developer</td>
<td>$54,750-81,500</td>
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<tr>
<td>Systems Analyst</td>
<td>$80,430</td>
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<tr>
<td>IS Manager</td>
<td>$112,210</td>
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www.bls.gov/ooh
Careers in Information Technology

Though careers in IT depend on the needs of a company, a couple of the more common IT jobs are described here.

**Computer Programmers**

Computer programmers are the mainstay of the information technology (IT) field. Without their efforts we could never communicate with our PCs. Essentially, computers are dumb boxes. They can’t solve even a simple math problem without a series of programming commands to tell them how to do it.

Programmers and other related specialists spend countless hours typing lines of code to tell the computer how to function. Computer programmers create all the programs we use on a daily basis, from word processors to video games. Programmers speak in languages unfamiliar to most of us, such as C++, BASIC, Java, and HTML. These are not languages in the traditional sense of the word. Instead, they are codes that instruct computers how to operate. Most programmers know several languages and must also be willing to learn new ones as they develop.

Advice: Patience is very important. Each line of code must be written to an exact level of detail. Any mistakes will cause a system to come to a crashing halt.

**Systems Administrators**

System administrators are the generalists of the information technology world: They make sure wires connect, software runs smoothly, and printers function properly. Part electrician, part programmer, part engineer, they need to know a little about a lot so they can put computer systems together, make them work, and keep them going day after day.

If you become a system administrator, others will see you as having almost occult powers: You’ll be the person everyone runs to when anything goes awry. As a result, you’ll probably be forced to carry a beeper or cell phone. Just like doctors, you’ll often be on call, and need to be ready at four a.m. when something in the system breaks down. Though the average employee may take a working computer system for granted, it’ll be your talent and skills that make a system function properly.

Advice: You need to be a superb problem solver, able to figure things out without help from others.

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### Resume Tips

Feature your technical skills near the top of your resume. Immediately following your Education section is a good place.

Most Wake Forest CS grads should be able to list C/C++, Flash, Matlab, Objective-C, Python, Linux, OSX, Solaris, and Windows.

You might want to organize your technical skills into categories such as hardware, software, languages, and Web experience.

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### Gain Experience at Wake Forest

Wake Forest offers employment opportunities to students that develop technology skills through relevant and challenging work experiences. Students participating in these programs are selected on the basis of academic standing and technical skills. For more information on student technology opportunities, go to [http://help.wfu.edu/services/studentemployment](http://help.wfu.edu/services/studentemployment).

Information Systems Student Staff work in a variety of areas including: Communications, The Bridge (Service Desk), Networking, Overseas Computing Support, and Technical Services. These jobs require and develop a range of skills varying from basic computing to administrative tasks and customer service.

**Service Desk Student Consultants** work at The Bridge, providing front line technical support for students, faculty and staff. These students have the opportunity to diagnose and troubleshoot hardware and software problems. They are trained to resolve software related problems with minimal supervisor intervention while demonstrating exemplary customer service.

**Student Assistants** provide technical assistance to faculty, staff and students through Wake Forest overseas programs in Vienna, Venice, Salamanca and London. They work closely with members of the Overseas Computing Support Team to resolve issues with laptops, the house’s wireless network, printers, and multimedia equipment. These students are nominated by staff and faculty outside of the Information Systems Department.
Careers in Web Development

The following descriptions of career tracks provides a general introduction to the range of opportunities in Web development. Keep in mind that job descriptions in Web development are fluid, rather than fixed; many roles evolve into other roles, and where a title means one thing at one company, it can mean something quite different at another.

**Web Design:** Web designers are responsible for creating the look and feel of a website. They create logos, banners, and other graphics; determine where to put text; and structure a site’s navigation. They work closely with marketing teams and branding experts to ensure that a site conveys a consistent image. The design function is frequently outsourced by smaller organizations that do not have the budget or inclination to maintain a website themselves.

**Web Programmers:** Programmers turn the Web development team’s concepts into a functioning site. They must know HTML, the basic coding language of websites, inside and out. Most are experts in the more sophisticated programming languages such as Java, JavaScript, CGI, and Perl. Programmers should also have experience with Web development tools such as Dreamweaver, Flash, and Cold Fusion.

**Web Production:** Web producers play different roles in different organizations. In some cases, they code the text and graphics that are on a site. In other cases, they coordinate across departments to make sure a website’s content works the way it’s supposed to. That is, they make sure links lead where they are supposed to lead; online forms function the way the programmer intended; and everything else that’s on the site works.

**Project Management:** Project managers lead teams to get things done. They set a production schedule, set deadlines, and make sure everyone works together. Project managers can lead discrete projects, such as adding community to a website; they can also oversee wider areas. In many ways, the project manager’s role is similar to that of the producer, but on a lower level. The role requires excellent communications skills, a strong technical background, financial planning ability, and management experience. An e-commerce site can additionally have a technical administrator for its transactional software.

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IS/IT Internships

Having trouble finding an internship? Not sure which field is right for you? If you’re familiar with operating systems, database programs, or networking, chances are a company out there needs your help. You don’t have to restrict yourself to the tech world. Banks, hospitals, museums, government agencies, and nonprofits all use computer technology in their offices, and might need interns. As an intern in this field, you’ll make sure the computers and network systems work smoothly, helping to troubleshoot as problems arise.

Although opportunities of this type are sometimes listed as full-time positions, try calling the technology department of a company that interests you and asking if they would be willing to hire you as an intern. Even if they can’t offer you the most competitive salary in the industry, the hands-on experience you gain will make you highly marketable for future employment.

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