Wire the World

Your guide to careers in INFORMATION TECHNOLOGY

Great Career Ideas • Creating Your Plan • College Resources
This guide is part of a series created to help students in Alabama learn more about careers, salaries, and the steps they need to take to reach their goals. By connecting what they learn in the classroom to real jobs that interest them, Alabama students will graduate better prepared for life and work. You can help your child use this guide by:

◆ Talking to your child about what careers interest him or her—and why
◆ Sharing your work experiences—pro and con—with your child
◆ Asking people in your community who work in jobs that interest your child to talk about their careers or to let your child visit their workplace.

Robert Bentley, Governor of Alabama

The investments we make in our students today will help shape their futures for years to come. Our students are destined to become high-performing professionals in all sectors of the workforce.

Alabama SUCCESS is an initiative designed to help students access valuable information about current careers, postsecondary learning, and financial literacy resources.

Our goal is to give students the opportunities they need to prepare themselves for success. We want our students to be well-equipped for top careers in Alabama’s workforce—which has a growing influence on the global marketplace.

This Alabama SUCCESS guide is a great resource to assist in preparing for a bright and successful future.

Dr. Thomas R. Bice, Alabama State Superintendent of Education

Alabama SUCCESS is an invaluable resource designed specifically for students. By learning about actual career fields and the education and experience required for specific jobs, you will be better able to figure out what you want to do after high school and what you need to do to achieve your goals.
When you work in Information Technology (IT), employers look for certain skills and personal qualities, including:

**Discipline.** In IT, says Birmingham-based consultant Glenn Phillips, president of the Birmingham computer systems consulting firm Forté, Inc., you must have the discipline to carry a job through to completion. That involves paying close attention to detail and making sure programs are thoroughly checked and operating as planned.

**Broad experience.** Intelligence is important in IT, but, says Phillips, “folks who work for us don’t come in with just one single [job] experience” Experience in many fields—both related to IT and not—increases your value as an employee.

**Communication skills.** Phillips says his employees “absolutely must be able to communicate with people who are not technical. In today’s market, you’d better be able to talk to a customer.”

**Business savvy.** “If you look at the finances of most Americans,” Phillips comments, you can see “they don’t grasp how money works. And in our business, we not only have to understand how our business works, we have to understand how somebody else’s business works if we’re going to automate it.”
Information Technology

There are some 2,000 information technology companies in the state of Alabama employing more than 20,000 people, but those numbers don’t begin to reflect the impact of IT on the way people live. Daily tools as varied as cars and cameras incorporate digital devices, and the demand for technical workers is still high. If you are skilled, have self-discipline, and love working with computers, you could have a bright future in IT.

YOU DECIDE

1. Are you good at math?
2. Do you like to take things apart and put them back together?
3. Can you explain computers to people who have limited experience with them?
4. Are you interested in the way businesses work?
5. Are you detail oriented?

WHY IT MATTERS:
- Mathematics is the basis for the way computers work.
- IT jobs require top-notch engineering skills, including a knack for figuring out what makes things tick.
- IT jobs are project-based, so you need to be able to communicate and work well with others.
- Many IT projects involve automating business operations.
- In IT, small mistakes can crash large systems.

If you answered “yes” to most of these questions, Information Technology could be right for you.

YOUNG PROFESSIONAL PROFILE

NAME: Forrest Ford
EDUCATION: Tuscaloosa County High School, Northport; University of Alabama, Tuscaloosa—Information Systems and Electrical and Computer Engineering, Bachelor of Science Degree

EDUCATION GOAL: Forrest Ford graduated from Tuscaloosa County High School in the spring of 2009 and entered the University of Alabama in the fall.

CAREER GOAL: “I’m looking into majoring in information systems and electrical and computer engineering.”

CAREER PASSION: “I’ve always been interested in technology. I’ve always been able to pick it up pretty quickly, and I just began taking more and more classes in high school. In Network Management and Support, we trained and practiced to get the CompTIA [Computing Technology Industry Association] A+ certification. There’s so much you can do now with technology, there are so many varied applications, the possibilities are almost endless. That’s a really neat aspect of it. It’s just a good thing to go into, especially now that the world is using technology more and more every day.

LEARN MORE
Explore IT education and career options at the website of the Alabama Information Technology Association (AITA).
Sit down with your parents and counselor and create a plan.

Map out an Alabama Education Plan (sample at right) based on your interests, strengths, and possible career goals. Your plan outlines the courses and electives you’ll take in high school, plus related clubs and career preparation. Your counselor will work with you to determine the learning experiences needed for you to complete your plan, such as using distance learning or earning college credit from your local community college.

Here’s a sample Alabama Education Plan for you to use as a guide.

ARTICULATION AGREEMENT

is a fancy term for a simple education agreement that can streamline your road to a successful career.

Statewide articulation agreements link all high schools and two-year colleges in Alabama. They provide credit at two-year colleges for coursework mastered at the high school level.

Articulation agreements can take you down your career pathway as well. In many cases, students transferring from two-year to four-year colleges and universities can complete four-year general studies core course requirements before they transfer.
CAREER IDEAS

Need-to-know facts and figures about real Alabama jobs, salaries, and education options in Information Technology.

The 12 careers highlighted on the next page are a sampling of occupations in the Information Technology cluster in Alabama. The charts include occupation name, description, plus wages for workers just starting out in the profession, average wages for those in the occupation, and the wages earned by experienced workers in the job (see “How to Read Job Charts”). The bar below the occupation’s name contains the Standard Occupational Code (SOC); use the SOC to look up more information about the career in online databases such as O*NET (see below). The bars are also color-coded to indicate the minimum level of education required for each profession.

For further information on occupations in all career clusters, go to the O*NET database.

Software Consultant

WHAT: Often working in small organizations, but serving clients across the country, consultants help companies automate operations and troubleshoot software problems.

WHO: Software consultants are patient and thorough customer-service specialists who take the time to learn exactly what their clients need and what their businesses are all about.

Animation Specialist

WHAT: Multimedia artists and animators create special effects and animation—using computers, film, video, or other electronic tools—for use in computer games, movies, music videos, and commercials.

WHO: Computer animation may be the closest IT comes to show business, but it is hard work. Three minutes of animation for a movie or video game might take a month to put in place. But as technology makes computer graphics and special effects more realistic, the possibilities for dazzling creativity continue to expand.

Desktop Publisher

WHAT: Desktop publishers format words and pictures using computer software to produce publication-ready material.

WHO: Sometimes this material goes to a traditional printer, and sometimes it is posted directly on the Internet. Newspapers and television stations across the country now maintain online editions that are updated throughout the day. Desktop publishers need to be proficient in a variety of graphics programs and understand the information needs of their audience. In journalism, electronic publishing is the wave of the future.
Computer User Support Specialist
Provide technical assistance to computer users, answering questions and resolving computer problems.

Network Systems and Data Communications Analyst
Design, test, and evaluate network systems, such as Internet, intranet, and other data communications systems.

Database Administrator
Coordinate changes to computer databases, test them, and put them in place.

Network and Computer System Administrator
Install and support organizations' local area networks, wide area networks, and Internet systems.

Computer and Information Systems Manager
Direct work in such fields as electronic data processing, information systems, systems analysis, and computer programming.

Computer Hardware Engineer
Develop computer equipment for commercial, industrial, military, or scientific use.

Computer and Information Research Scientist
Conduct research into fundamental computer and information science as theorists, designers, or inventors.

Applications Software Engineer
Develop, create, and modify general computer applications software or specialized programs.

Computer Operator
Run computer and electronic data processing equipment to process business, scientific, engineering, and other data.

Computer Support Specialist
Provide technical assistance to computer users, answering questions and resolving computer problems.

Computer Systems Analyst
Analyze data processing problems for application to data processing systems.

Computer and Information Systems Manager
Direct work in such fields as electronic data processing, information systems, systems analysis, and computer programming.

Computer Hardware Engineer
Develop computer equipment for commercial, industrial, military, or scientific use.

Computer and Information Research Scientist
Conduct research into fundamental computer and information science as theorists, designers, or inventors.

Computer Operator
Run computer and electronic data processing equipment to process business, scientific, engineering, and other data.

Computer Support Specialist
Provide technical assistance to computer users, answering questions and resolving computer problems.

Computer Systems Analyst
Analyze data processing problems for application to data processing systems.
Now is the time to take a fresh look at Information Technology careers you may not have considered before.

**MYTH:** An interest in math or engineering guarantees Information Technology success.

**FACTS:** If you’re interested in math, you should look into careers in Information Technology. However, according to Glenn Phillips, president of the software consulting firm Forté, Inc., being good at math or engineering does not guarantee success.

Phillips says having learned how to learn is as important for employees in his company as mastering computer engineering. “In technology, it’s all going to change so fast that I’m more interested that they learned the discipline in school than the exact computing tools, because the tools are going to change.”

**Reality Check**

What It Costs to Live on Your Own in Alabama


**Car payment:**

- $350–$450 (Best 2010/2011 4-door)

**Gasoline:**

- $124 (1,000 miles @ $3.10 per gallon, 25 MPG)

**Groceries:**

- $200–$250

**Cell phone:**

- $70

**Rent and utilities:**

- $700–$800 (1-bedroom)

**Cable and Internet:**

- $90

**Car insurance:**

- $30–$95 (6-month policy)

**Note:** Keep in mind that your paycheck will be reduced by about 30 percent to cover taxes, retirement, and insurance. What’s left is known as your “take-home pay.” Subtract 30 percent from the salaries shown on page 5 to get a more accurate take-home amount.

**Monthly total:**

- $1,310–$1,654

**Yearly total:**

- $15,742–$19,851
Check it OUT

Most Alabama schools offer this student organization related to the Information Technology career cluster:

Technology Student Association (TSA)

TSA prepares students to meet the challenges of a high-tech world by promoting technological literacy, leadership, and problem-solving skills. Members have opportunities to develop and showcase their technology skills through individual and team competitions.

Take It to the Next Level

In Alabama, the learning doesn’t stop with high school graduation. Here is a list of public postsecondary (after high school) institutions that may offer programs related to this cluster.

Two-Year Institutions Offering Certificates or Associate’s Degrees
- Alabama Southern Community College, Monroeville
- Bevill State Community College, Sumiton
- Bishop State Community College, Mobile
- Calhoun Community College, Alexander City
- Chattahoochee Valley Community College, Phenix City
- Enterprise-Ozark Community College, Enterprise
- Faulkner State Community College, Bay Minette
- Gadsden State Community College, Gadsden
- H. Councill Trenholm State Technical College, Montgomery
- Jefferson Davis Community College, Brewton
- Jefferson State Community College, Birmingham
- J.F. Drake State Community College, Huntsville
- Lawson State Community College, Birmingham
- Lurleen B. Wallace Community College, Andalusia
- Marion Military Institute, Marion
- Northeast Alabama Community College, Rainsville
- Northwest-Shoals Community College, Muscle Shoals
- Reid State Technical College, Evergreen
- Shelton State Community College, Tuscaloosa
- Snead State Community College, Boaz
- Southern Union State Community College, Wadley
- Wallace Community College (Selma), Selma
- Wallace State Community College (Dothan), Dothan
- Wallace State Community College (Hanceville), Hanceville

Four-Year Institutions Offering Bachelor’s, Master’s, Doctoral, or First Professional Degrees
- Alabama A&M University, Normal
- Alabama State University, Montgomery
- Athens State University, Athens
- Auburn University, Auburn
- Auburn University at Montgomery, Montgomery
- Jacksonville State University, Jacksonville
- Troy University, Troy
- Troy University Dothan, Dothan
- Troy University (Montgomery), Montgomery
- University of Alabama at Birmingham, Birmingham
- University of Alabama in Huntsville, Huntsville
- The University of Alabama, Tuscaloosa
- University of Montevallo, Montevallo
- University of North Alabama, Florence
- University of South Alabama, Mobile
- University of West Alabama, Livingston

Certifications

While attending high school and postsecondary institutions, all Alabama students should consider getting certifications related to their career cluster of interest. These certifications can improve a student’s skill set, as well as increase the student’s overall chance of gaining employment in the field.
**HIGH SCHOOL PROGRAM**

**GETTING READY**

**GRADE 9 FRESHMAN YEAR**

- Research your career options based on your interests, talents, and goals.
- Choose a career cluster.
- Create an Alabama Education Plan (see page 3).
- Do your best work in all your classes. Course selection and grades really do count when you are applying to colleges and training programs.
- Keep a folder or portfolio of your activities, awards, accomplishments, and work experience, and add to it during your high school career.

**GRADE 10 SOPHOMORE YEAR**

- Continue building the strongest possible academic record.
- Consider taking the PLAN (pre-ACT) if you plan to apply to a two-year college or university in the future.
- Consider taking the PSAT (preliminary SAT/National Merit Scholarship Test) if you plan to apply to a two-year college or university in the future.
- Use the information in your portfolio to create a resume.
- Apply for summer jobs, internships, or volunteer activities related to your career cluster.

**GRADE 11 JUNIOR YEAR**

- Take the PSAT/NMSQT.
- Use resources available at your school (books, online tools, college fairs, etc.) to research postsecondary education options related to your career goals.
- Register to take either the ACT or the SAT I and SAT II Subject Tests. There are testing dates every month from January through June. Registration deadlines are approximately four weeks before each testing date.
- Apply for summer jobs, internships, and volunteer activities related to your career goals.
- Register to take either the ACT or the SAT I and SAT II Subject Tests. There are testing dates every month from January through June. Registration deadlines are approximately four weeks before each testing date.

**GRADE 12 SENIOR YEAR**

- In the fall, apply to postsecondary programs and retake any standardized college admissions tests if you would like to improve your score.
- Beginning in November, complete college financial aid forms. Deadlines and required data differ from school to school, so read the instructions carefully.
- In the spring, choose your postsecondary program on the basis of where you have been accepted, costs, etc.
- Continue doing your best work. Most schools require a final transcript before making your acceptance official.

**COLLEGE PREP: Getting Accepted**

The college admissions process can be stressful and a bit scary, especially if you are the first in your family to apply. Give yourself the best shot at getting into a college program that matches your goals by following these five steps:

1. **Make the Grade**
   Your grade point average really does count, so do your best work on every assignment, pay attention in class, and participate in group discussions.

2. **Get Involved**
   Build teamwork and leadership skills by joining clubs and teams at your school, volunteering for service projects, and participating in church or community activities.

3. **Make a List**
   Before you can apply to college, you have to figure out what you would like to study and what matters most to you (like location, size, or religious affiliation). Use the college guides in your local library, school library, or counselor’s office to start making a list of colleges that interest you.

4. **Plan for Tests**
   Most colleges want scores from the ACT, SAT, or SAT II tests. See what tests the schools on your list require, sign up to take them in time to include the scores on your application, and then practice the free SAT sample questions.

5. **Be Neat and Complete**
   Before you send in a college application, double-check your spelling, make sure nothing is missing, and save a copy just in case you have to submit it again.

**PAYING YOUR WAY: Financial Aid**

Every Alabama student can afford to go to college. It just takes a little planning. Put your college dreams within financial reach by taking these five steps:

1. **Consider a Community College**
   Alabama’s public and private two-year colleges offer an affordable way to earn an associate’s degree or complete enough credits to transfer into a four-year school as a junior.

2. **Weigh Your Options**
   Attending one of Alabama’s four-year public or private schools cuts travel costs and other living expenses, as compared to attending schools out of state. In addition, public schools offer reduced in-state tuition, and, if there’s a college nearby, you can save even more by living at home.

3. **Rise to the Top**
   Apply to a couple of schools at which your grades and accomplishments put you near the top of the typical applicant pool. Since your application will stand out, you’ll be more likely to qualify for scholarships and other merit aid.

4. **Do a Little Digging**
   More than one million local, national, and college-specific scholarships are available each year. Ask your school librarian and counselor for help finding printed scholarship resource guides. To find and apply for scholarships online, sign up for the free college scholarship.

5. **Apply for Aid**
   Fill out the Free Application for Federal Student Aid (FAFSA) as soon as possible after January 1 of the year you’ll be starting college. FAFSA forms and instruction booklets are available in your guidance counselor’s office. Some schools also require the CSS/Financial Aid Profile form, and others have their own financial aid forms. Carefully read each college’s application to figure out what forms you need to submit and when.
Articulation agreements: formal agreements between or among educational organizations (high schools, community colleges, and universities) that allow students to receive college credit for courses taken in high school.

Associate’s degree: a two-year degree awarded by a community college.

Bachelor’s degree: a four-year degree awarded by a college or university.

Career and technical student organizations (CTSOs): co-curricular organizations for students that offer activities and competitions related to particular careers.

Career Clusters: identifies pathways from high schools to two- and four-year colleges, technical schools, graduate schools, apprenticeship programs, and workplace so that learners can recognize the relationship between what they learn in school and what they can do in the future.

Career Pathways: pathways are sub-groupings of occupations/career specialties. Occupations/Career specialties are grouped into Pathways based on the fact that they require a set of common knowledge and skills for career success.

Doctoral degree: a degree awarded by universities for study beyond a master’s degree. May also be called a Ph.D. or a first professional degree.

Dual enrollment: a program between Alabama public colleges and universities and local boards of education that allows high school students to enroll in certain approved college-level courses to receive both high school and college credit.

ECEP (Early College Enrollment Program): a program that allows juniors and seniors to have full-time enrollment at an Alabama public college or university while still graduating with their class and staying involved with high school activities.

Extended learning experiences: participation in career and technical student organizations, co-curricular activities, job shadowing, internships, or community service.

Internship: an extended learning experience that gives students an opportunity to work temporarily at an entry-level job in a career that interests them.

Job shadowing: an extended learning experience in which students observe professionals in particular careers as they go through a day on the job.

Master’s degree: a degree awarded by universities for study beyond a bachelor’s degree.

Postsecondary education: education beyond high school. Middle and high school are referred to as secondary education, so postsecondary means after high school.

STARS (State Transfer & Articulation Reporting System): STARS System allows public two-year students in Alabama to obtain a Transfer Guide/Agreement for the major of their choice. This guide/agreement, if used correctly, guides the student through their first two years of coursework and prevents loss of credit hours upon transfer to the appropriate public four-year university in Alabama.

Resource Shelf
Use these websites and other resources available from your school counselor to learn more about careers, career clusters, and educational and job opportunities in high school and beyond.

ACCESS
ACCESS (Alabama Connecting Classrooms, Educators, and Students) Distance Learning provides opportunities and options for Alabama public high school students to engage in advanced placement (AP), elective, and other courses to which they may not otherwise have access.

Alabama Career Information Network
This new Web portal increases Alabama students’ and families’ access to valuable career exploration activities and college financial aid information.

Alabama Commission on Higher Education
Click on “Colleges & Universities” within this website for a list of four-year institutions in Alabama.

The Alabama Community College System
Learn all about the public and private two-year colleges in Alabama. Connect directly to each school’s website to see the courses, majors, degrees, and scholarships it offers to Alabama students.

Alabama Tech Prep
This booklet is sponsored by Alabama Tech Prep. The goal of Tech Prep is to create a smooth transition from high school to college and to a career.

Alabama Virtual Library
This Alabama Legislature–funded site provides all students, teachers, and citizens of the State of Alabama with online access to essential library and information resources.

America’s Career InfoNet
Use this site to search for occupational information, industry information, and state-specific labor market information.

Career Voyages
This career planning resource helps students, parents, career changers, and career advisors.

O*NET (Occupational Information Network)
O*NET provides full information on occupations, including state-by-state salary data, employment prospects, and skill matching for students.

U.S. Department of Labor Occupational Outlook Handbook
A valuable resource for both counselors and students, this federal website offers updated information on careers, job responsibilities and working conditions, salaries, and what jobs will be available in the future.