




INFORMATION TECHNOLOGY

A collage of various images related to information technology, including server racks, people working at computers, and abstract digital graphics, all overlaid with a red tint. The central text "CAREER SUCCESS GUIDE" is prominently displayed in white.

CAREER SUCCESS GUIDE

Great Career Ideas • Creating Your Plan • College Resources



A MESSAGE FROM THE GOVERNOR

As I've said on many occasions, our people are Alabama's greatest strength, especially our young people, who hold the state's future in their hands. As the guardians of our state's future, students deserve every possible tool to help them—and Alabama—succeed in all areas.

To achieve this, we have created the Alabama SUCCESS Guides, which are designed to assist students in identifying resources regarding

careers, postsecondary education and financial literacy. Through our students, we are positioning our state for even greater accomplishments. They will be well-equipped for careers in Alabama's workforce which will allow them to compete—and excel—in our global economy.

This Alabama SUCCESS Guide is an excellent tool in helping our students of today become our leaders of tomorrow.

Kay Ivey, Governor of Alabama

ATTENTION PARENTS!

This guide is part of a series created to help students in Alabama learn more about high-demand careers, salaries, the steps they need to take to reach their goals, and the resources that can help them get there.

The workforce has changed since you entered it. Many of the jobs that exist today were not even created when you graduated from high

school, and the pace of change is faster than ever! However, since work skills are transferable to many jobs, by helping your student connect with what they learn in the classroom to real jobs that interest them, they will graduate better equipped for life after high school.

Thank you for talking with your child about what careers interest them – and why. You can help them by

sharing your own work experiences with your child. Ask people in your community who work in jobs that interest your child to share about their careers or let your child visit their workplace. And last, but not least, go with your child to meet with their school counselor or career coach to get them moving in the right direction. Help them prepare for their future...today.



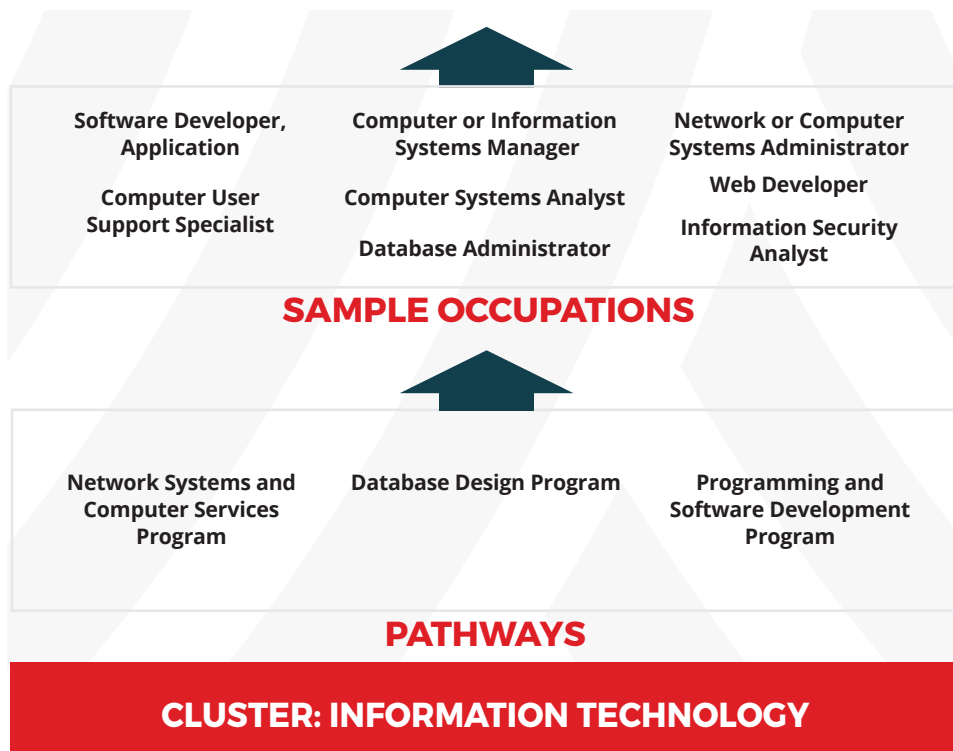
WHAT EMPLOYERS WANT

ROBIN E. HUNT
CHIEF EXECUTIVE OFFICER
THINKDATA SOLUTIONS, INC.

“**INFORMATION TECHNOLOGY EMPLOYERS ARE LOOKING FOR PEOPLE WITH SOFT SKILLS LIKE TEAMWORK, PROJECT MANAGEMENT, AND GENERAL TECHNICAL SKILLS.** No other skills are quite as universal as technical skills; they touch every industry and business in Alabama. I would recommend to students, at an early stage, to invest your time in learning soft skills like teamwork, project management, and general technical skills. These skills are a must no matter your chosen technical expertise. Whether your interest is in IT infrastructure, information security, data and analysis, coding, or skills to improve every day process controls, in the tech world, you never stop learning, so the ability to change and to find and learn new information are also critical skills.”

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THINK AGAIN

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
 Estimated 2017-2018 monthly expenses for a 22 year-old living in Birmingham.

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 pages 5 and 6 to get a more accurate take-home amount.

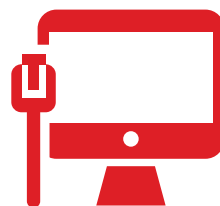
Groceries:
 \$350-\$400



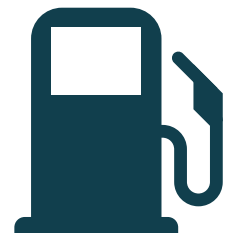
Mobile Phone:
 \$55



Cable and Internet:
 \$80



Gasoline:
 \$100
 (1,000 miles @ \$3.00 per gallon, 30 mpg)



Rent and Utilities:
 \$700-\$850
 (1 Bedroom)



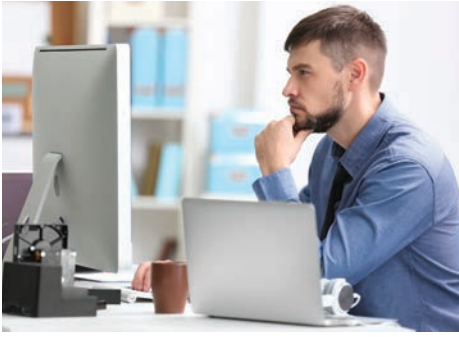
Car Payment:
 \$350-\$450
 (Used 2016)



Car Insurance:
 \$60-\$125
 (6-Month Policy)



Sources:
 RENT: rentbits.com/rb/t/rental-rates/birmingham-al
 CAR: carsdirect.com
 MOBILE PHONE: att.com, verizon.com
 GROCERIES: bestplaces.net
 CABLE AND INTERNET: birmingham.mybriighthouse.com
 CAR INSURANCE: progressive.com
 GAS: gasbuddy.com



COMPUTER SYSTEMS ANALYST

Job Description: Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.

Education: Bachelor's degree

Salary Range: \$55,878 – \$90,259



SOFTWARE DEVELOPER, APPLICATION

Job Description: Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May supervise computer programmers.

Education: Bachelor's degree

Salary Range: \$62,504 – \$113,927



COMPUTER OR INFORMATION SYSTEMS MANAGER

Job Description: Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.

Education: Bachelor's degree

Salary Range: \$76,885 – \$147,660

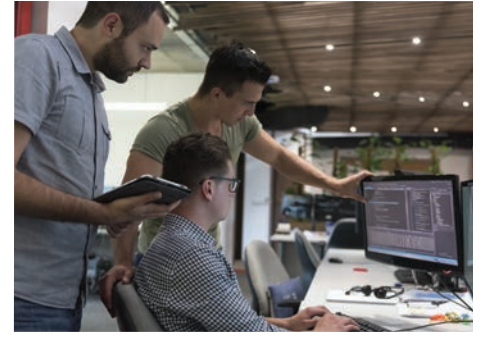


COMPUTER USER SUPPORT SPECIALIST

Job Description: Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.

Education: Some college, no degree

Salary Range: \$30,356 – \$57,066



SOFTWARE DEVELOPER, SYSTEM SOFTWARE

Job Description: Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.

Education: Bachelor's degree

Salary Range: \$67,123 – \$119,703



DATABASE ADMINISTRATOR

Job Description: Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.

Education: Bachelor's degree

Salary Range: 50,429 – 91,017



NETWORK OR COMPUTER SYSTEMS ADMINISTRATOR

Job Description: Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test Web site performance to ensure Web sites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures.

Education: Bachelor's degree

Salary Range: \$ 49,733 – \$84,237



WEB DEVELOPER

Job Description: Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content.

Education: Associate's degree

Salary Range: \$34,586 – \$68,526



COMPUTER NETWORK SUPPORT SPECIALIST

Job Description: Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet system. Perform network maintenance to ensure networks operate correctly with minimal interruption.

Education: Associate's degree

Salary Range: \$40,341 – \$71,271



INFORMATION SECURITY ANALYST

Job Description: Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

Education: Bachelor's degree

Salary Range: \$61,654 – \$100,695



COMPUTER HARDWARE ENGINEER

Job Description: Research, design, develop, or test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components.

Education: Bachelor's degree

Salary Range: \$78,788 – \$126,186

PAUL GIBBS VICE PRESIDENT

SYNDESI SYSTEMS

I am the Vice President of a small IT company in Athens, AL so we all have to wear many hats. My primary role is to be the technical team lead. My team of Network Engineers and Network Administrators work together with me to solve clients' problems and provide planning for their future IT needs.

While attending East Limestone High School, I toured the Limestone County Career Technical Center (LCCTC) as a 9th grader. At that time there was not a computer class, but they were planning to add one the next year. I felt the Tech school would be a better fit for me; from

an early age I did not feel the challenge of the normal school path, and I wanted to see other options. I started my 10th grade year at LCCTC in Computer Maintenance Technology. I found that I was excited to come to school every day and learn. I was a quick learner, and I studied

“Attention to detail and wanting to provide the very best for my clients while being professional and personable has helped me in my career.”

for the State Skills USA (VICA) contest and won 1st place. From there I went on to compete at the national contest in Kansas City, Missouri and placed 6th in the nation. I went on to win 1st in the state and 2nd in the national contest in my junior and senior years. I started the co-op program at LCCTC and went to school half a day and worked the other half of the day as a computer technician for Limestone County Schools. In January of my senior year, I was employed by a government contractor in Huntsville, AL. Attention to detail and wanting to provide the very best for my clients while being professional and personable has helped me in my career.

Graduate of East Limestone High School
Athens, AL

TYLER STROMBERG NETWORK ADMINISTRATOR

DIXIE PULP & PAPER

I manage computers and networks throughout the company where I work.

My education after high school has been primarily completing different certification courses (CompTIA A+ and Network+ along with several Microsoft certifications). Previous to my current position, I worked at a local technology company. I am doing what I love, and I enjoy staying on top of new technologies

“I am doing what I love, and I enjoy staying on top of new technologies and computer network advancements.”

and computer network advancements. My biggest asset is my ability to troubleshoot and to get along with others. Troubleshooting is a very specific process and requires diligence

and detailed focus. If you skip a step to speed things up, you might jump past where the problem originated. So it can be a little tedious at times. Also, having good people skills even though you work with computers is a big plus because you still have to talk with the people who are having the computer issues in order to solve/resolve them.

Graduate of Tuscaloosa County High School
Northport, AL

DANIEL TREY HILBURN WEB DEVELOPER

WIDENET CONSULTING, LLC

I am currently a full stack Web Developer which means that I work on a website from the frontend systems to the backend systems. I have to create the code for the looks and the functionality of the website. I work with HTML, CSS, Javascript, and PHP to make sure a website works properly.

I always loved technology ever since I got handed down my first computer from my grandfather, which was a Windows 95 computer. I loved messing around and learning how to use it. I learned how to write documents and use some of the useful

features Windows had to offer. I then grew up and had to take a course on typing along with a business technology course in high school. These classes had me really interested in growing my passion for technology. I then went to college where I had planned to pursue a degree to become a medical doctor. These plans changed shortly after

“The work I do is very rewarding because I can instantly see the product that I'm creating from start to finish.”

I took my first Computer Science course, Fundamentals of Computing. The course taught me valuable programming, and I am now about to graduate with my degree in Computer Science. I have gotten a part-time job as a Web Developer that allowed me to gain valuable experience. I work with clients to provide a fully functioning and responsive website. The work I do is very rewarding because I can instantly see the product that I am creating from start to finish. I look forward to developing and advancing in my career, growing my knowledge every step of the way.

Graduate of Sardis High School
Boaz, AL



CRAIG TAYLOR
NETWORK ENGINEER/SYSTEMS INTEGRATOR

INTEGRATED CORPORATE SOLUTIONS, INC.

Graduate of Cherokee High School
Cherokee, AL

I plan, design and implement computer networks for corporations. I come up with the types of hardware such as switches, routers, firewalls, servers and many other things that will fulfill the needs of the company I am working with at the time.

I always had an interest on how things worked. I took electronics apart to see how they worked. When I was about ten, I got my first computer. At the time, there were no disk drives, no games to load. But there were magazines in stores that had computer code

in them. I would get them and try typing in the code on the computer. This piqued my interest. In high school I took the basic computer classes and did well. I started out in Fiber Optic Communications in college. After the first quarter, I changed my major to Computer Science because I spent most of that quarter in the computer lab. At the time

"I love computers so it doesn't feel like work most of the time."

I was in college, the only IT courses offered were programming languages. I found out as I was finishing my degree that I really didn't want to program all the time; this led to the career that I am in now. Knowing how to program has helped me troubleshoot problems because I know the logic behind how computers work. I will probably always be in front of a computer for the rest of my life. Just like the saying goes, "if you do something you love, you will never work a day in your life." I love computers so it doesn't feel like work most of the time.

BRIAN ARNBERG
PROGRAM ENGINEER AND PROGRAMMER

NEPTUNE TECHNOLOGY GROUP

Graduate of Loveless Academic Magnet Program (LAMP) High School
Montgomery, AL

I write firmware for embedded devices, specifically for radios and registers. Besides writing firmware, I am also responsible for working with the product team to ensure that everything works correctly and is delivered on time.

Math and Science always clicked with me, and so even though what I wanted to do changed throughout childhood, I always focused on those subjects. When I got older I realized I could be an engineer. I didn't really know

which one I wanted, but I thought electricity was pretty neat so I went for Electrical Engineering. My university gave engineers the opportunity to co-op in the field in order to gain hands-on experience. I spent three semesters as a co-op student. When I finished getting my Bachelor's, I went and got a Master's in Electrical Engineering focused

"I get to live in this neat middle ground, seeing far into the past and helping to shape the future."

on Embedded Design, which is the marriage of Electrical Engineering and Programming. Now I'm working at a water meter company working on the firmware running on water meters and radios. The company is 125 years old - so there's a really great history to draw on and learn about. At the same time, we work on a lot of next-gen technology, so I get to live in this neat middle ground, seeing far into the past and helping to shape the future.

MADELYN DUNAVANT
BUSINESS SYSTEMS ANALYST

PROTECTIVE LIFE

Graduate of Hubbertville High School
Hubbertville, AL

My role is to help provide technology solutions. I gather and negotiate requirements with clients and help transfer those requests into language for developers. I provide support for users who need help or have problems with our applications. I also do a lot of testing of the software before it becomes a finished product.

I had the opportunity while in school to be exposed to a variety of subject areas, but I still struggled in knowing what I wanted to do when I got out of school. I started

creating technology projects in 3rd grade and continued until I graduated. I went to a computing Olympiad at a university that was hosted by their MIS department. Little did I know I would end up there, but I really enjoyed that experience. After graduating high school, I went to a community college and then transferred to the University of Alabama. I had an internship for about a year while I went to school and decided to go for a job similar to that one. My job hours are pretty normal, but they can increase as you get closer to a deadline or if there are issues with

the software that was created. Most days are spent in front of a computer screen, talking with business owners, or communicating with developers. I don't do any travel, but if I wanted to, those opportunities are definitely present. In the future I hope to be a data scientist that uses technology to help people make more informed decisions.

"In the future I hope to...use technology to help people make more informed decisions."



MAKE A PLAN

SIT DOWN WITH YOUR PARENTS AND COUNSELOR AND CREATE A PLAN

Map out an Alabama Education Plan (sample below) based on your interests, strengths, and possible career goals. Your plan outlines the courses and electives you'll take in high school, plus related co-curricular organization and career preparation experiences. Your school counselor or career coach 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. Below is a sample Alabama Education Plan for you to use as a guide.

SAMPLE EDUCATION PLAN FOR THIS CAREER CLUSTER

| GRADE 9 | GRADE 10 | GRADE 11 | GRADE 12 |
|----------------------|--------------------------|--------------------------|-------------------------|
| FRESHMAN YEAR | SOPHOMORE YEAR | JUNIOR YEAR | SENIOR YEAR |
| English 9 | English 10 | English 11 | English 12 |
| Algebra I | Geometry | Algebra II | Math Elective |
| Physical Science | Biology | Chemistry | Physics |
| World History | United States History 10 | United States History 11 | US Government/Economics |
| *Career Preparedness | *Health/Elective | **Elective | **Elective |
| *LIFE PE | **Elective | **Elective | **Elective |
| **Elective | **Elective | **Elective | **Elective |

*Other Required Courses

**Career & Technical Education and/or Foreign Language and/or Arts Education (3 Credits)

INFORMATION TECHNOLOGY CLUSTER COURSES

| | | | |
|---------------------------------|---|--------------------------------------|--|
| Alternating Current | Database Design III | Java Programming | Senior Career Pathway Project – Information Technology |
| AP Computer Science A | Direct Current | Networking I | |
| AP Computer Science Principles | Foundations of Informational Security | Networking II | Software Development |
| Computer Management and Support | Information Technology Fundamentals | Networking III | |
| Database Design I | Information Technology Support and Services | Networking IV | |
| Database Design II | | Principles of Informational Security | |

CO-CURRICULAR

WORK-BASED LEARNING

| | | | |
|-----------|-----------------|-------------|-----------------|
| SkillsUSA | Job Shadowing | Internship | Work Experience |
| FBLA | Career Day/Fair | Field Trips | Guest Speakers |

GETTING READY

MAPPING OUT YOUR PROGRAM

GRADE 8

- Research your career options based on your interests, talents, and goals.
- Create an Alabama Education Plan (see page 9).

GRADE 9 FRESHMAN YEAR

- Choose a career cluster.
- 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 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 resumé.
- 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.
- Use studentaid.ed.gov to determine your financial aid eligibility.

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 October, 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. All 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. 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 college location, size, or religious affiliation). Use the college guides in your local library, school library, school counselor's or career coach's office to start making a list of colleges that interest you. Use online tools like collegeboard.org and accs.cc to learn more about each school and take virtual campus tours.

3. GET INVOLVED

Build teamwork and leadership skills by joining career technical student organizations, clubs, and teams at your school, volunteering for service projects, and participating in church or community activities.

4. PLAN FOR TEST

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 at collegeboard.org or sample ACT tests at actstudent.org.

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. Learn more at accs.cc.

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.

4. DO A LITTLE DIGGING

More than one million local, national, and college-specific scholarships are available each year. Ask your school counselor or career coach for help finding printed scholarship resource guides. To find and apply for scholarships online, sign up for the free college scholarship search source achievealabama.org.

5. APPLY FOR AID

Fill out the Free Application for Federal Student Aid (FAFSA) beginning on October 1 of your Senior year. FAFSA forms and instruction booklets are available at your school counselor's office and online at studentaid.ed.gov. Some schools also require the CSS/Financial Aid Profile form (profileonline.collegeboard.org), and others have their own financial aid forms. Carefully read each college's application to know what forms you need to submit and when.

| | |
|--|--|
|  | AGRICULTURE, FOOD & NATURAL RESOURCES |
|  | ARCHITECTURE & CONSTRUCTION |
|  | ARTS, A/V TECHNOLOGY & COMMUNICATIONS |
|  | BUSINESS MANAGEMENT & ADMINISTRATION |
|  | EDUCATION & TRAINING |
|  | FINANCE |
|  | GOVERNMENT & PUBLIC ADMINISTRATION |
|  | HEALTH SCIENCE |
|  | HOSPITALITY & TOURISM |
|  | HUMAN SERVICES |
|  | INFORMATION TECHNOLOGY |
|  | LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY |
|  | MANUFACTURING |
|  | MARKETING |
|  | STEM |
|  | TRANSPORTATION, DISTRIBUTION & LOGISTICS |

CLUSTER PATHWAYS

Network Systems and
Computer Services

Programming and Software
Development

Database Design

POST SECONDARY LEARNING

COMMUNITY COLLEGE

4-YEAR COLLEGE/UNIVERSITY

WORK-BASED LEARNING

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