

NOVEMBER 2019

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# EDUCATION INVENTORY REPORT

GREATER BIRMINGHAM REGION

PUBLICATION 1 - NOVEMBER 2019





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## PROJECT OVERVIEW

Understanding a region's education infrastructure is a key component in the development of any successful workforce alignment strategy. By gaining a deeper insight into the types of programs offered and how these programs align with industry need, community leaders are equipped with the information needed to make informed decisions through the analysis of system gaps that may be causing a regional supply/demand imbalance.

The following report will outline the information compiled throughout the research process and highlight some of the key high-level findings. This report, however, isn't an exact science. Through a consistent process of critiquing and updating the information contained in the data set, the inventory will become increasingly accurate and impactful as a tool for guiding program development efforts moving forward (more on this in the Sustainability section).

## TARGETED INDUSTRY SECTORS

Based upon the recommendations of the Building (It) Together (B(i)T) Report, CAEL focused research efforts on the following three industries:



**Advanced Manufacturing**



**Bio-Technology/Life Sciences**



**Information Technology**

## CREDENTIAL TYPES

The following credential types were used to categorize each of the programs that lead to employment in one of the three industries indicated above.

- MIDDLE SCHOOL CREDIT
- HIGH SCHOOL CREDIT
- DUAL CREDIT
- APPRENTICESHIP
- CERTIFICATION
- BACHELOR'S DEGREE
- MASTER'S DEGREE
- DOCTORATE DEGREE

# EDUCATION INSTITUTIONS

## **TWO-YEAR PRIVATE**

Fortis Institute  
New Horizons Birmingham

## **TWO-YEAR PUBLIC**

Bevill State Community College  
Jefferson State Community College  
Lawson State Community College

## **FOUR-YEAR PRIVATE**

Birmingham Southern College  
Faulkner University  
Herzing University  
Miles College  
Samford University  
Strayer University  
University of Phoenix

## **FOUR-YEAR PUBLIC**

University of Montevallo  
University of Alabama at Birmingham (UAB)  
University of Alabama (Tuscaloosa)

## **CRAFT TRAINING ORGANIZATIONS**

Birmingham Electrical JATC  
Covalence  
Innovate Birmingham  
Insulators Local No. 78  
International Union of Operating Engineers  
Iron Workers Local 92  
TrueCoders

## **PUBLIC TECHNICAL CENTERS**

Alabama Workforce Training Center  
Blount County Career Technical Center  
Career Technical Education Center  
WA Lecroy Career/Technical Center

## **PUBLIC K-12**

Alabaster City Schools  
Bessemer City Schools  
Bibb County Schools  
Birmingham City Schools  
Blount County Schools  
Chilton County Schools  
Fairfield City Schools  
Homewood City Schools  
Hoover City Schools  
Jasper City Schools  
Jefferson County Schools  
Leeds City Schools  
Midfield City Schools  
Mountain Brook City Schools  
Oneonta City Schools  
Pelham City Schools  
Pell City Schools  
Shelby County Schools  
St. Clair County Schools  
Tarrant City Schools  
Trussville City Schools  
Vestavia Hills City Schools  
Walker County Schools

## METHODOLOGY

The process for collecting the information contained in the inventory began by compiling a list of institutions in the seven county region. CAEL worked with BBA to finalize the list encompassing all of the institutions offering programs in one of the three targeted industry sectors.

The next step in the inventory development process was to begin researching each of the institutions included on the list. This process consisted of visiting each institution's website and combing through course catalogs to identify programs that relate to the three targeted industry sectors.

Once a program was identified, we answered each of the following questions:

- What type of credential does successful completion of this program result in?
- What industry cluster and sub-cluster does this program fit into?
- Is the program offered online?

All of this information for each identified program was logged into an Excel spreadsheet and uploaded into Tableau for data visualization purposes. At the conclusion of the research, the data set contained information on 378 programs in the Birmingham region.

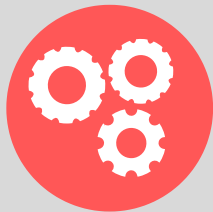
## SUSTAINABILITY

A crucial piece of this inventory is sustaining it over time. This inventory will be most effective as a “living” document that is continuously updated. This will never be an exact science, however by making consistent updates it can serve as a useful tool moving forward.

This inventory was created using Excel and Tableau. The two documents are linked together, and any changes made in the Excel document will automatically update the charts in Tableau upon saving, closing and re-opening. Excel updates should be made on the Master Program List sheet in the Excel workbook and follow the same formatting. To make updates to the charts in Tableau, the user must have a Tableau subscription, however for view-only access to the charts a free download of Tableau Reader will suffice. Other organizations have found success embedding Tableau workbooks into their website, creating an interactive dashboard accessible to the community.

A recommended best practice in sustainability is to solicit feedback from the community on the contents of the inventory on an annual basis. This could be done through a survey distributed to the various education & training institutions. As these edits and additions are submitted to the organization responsible for managing the inventory, the updates can be made on the Master Program List sheet in the Excel workbook. As aforementioned, these updates will automatically update the charts, which can then be inserted into future iterations of this report. By keeping this information in front of community and education leaders, it can be consistently critiqued and revised, ultimately becoming more precise in its representation of the education assets in the Birmingham region. For step by step directions on making changes to the database, please see the final page of this report.

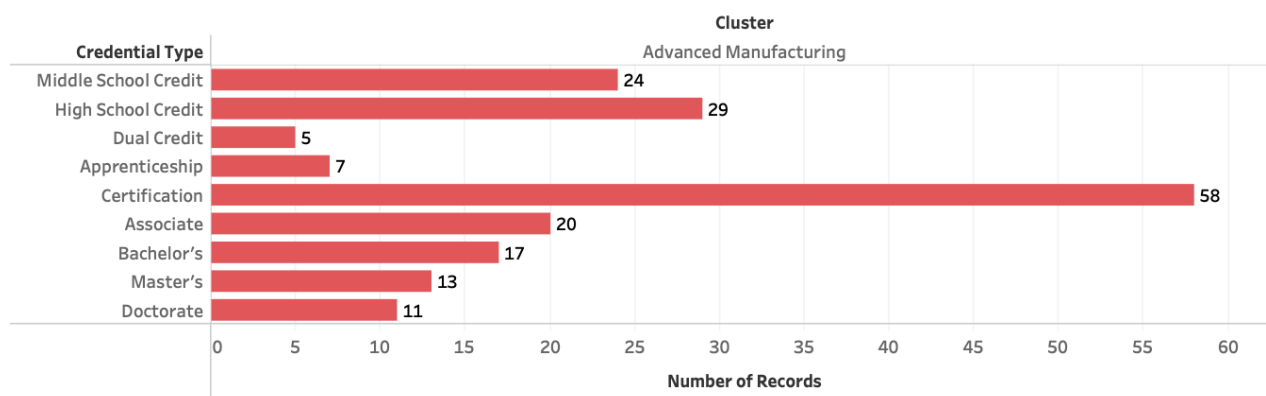




## KEY FINDINGS

- Engineering-related programs make up nearly 3/4 of all programs in this cluster.
- Of the three clusters analyzed, Adv. Manufacturing has the most short-term certification training options.
- About half of postsecondary Adv. Manufacturing programs are offered at two-year public institutions.
- This cluster is ideal for career pathway implementation, as it features credentialing opportunities across various education levels.

## CREDENTIALS AVAILABLE BY TYPE



## CREDENTIALS AVAILABLE BY INSTITUTION TYPE

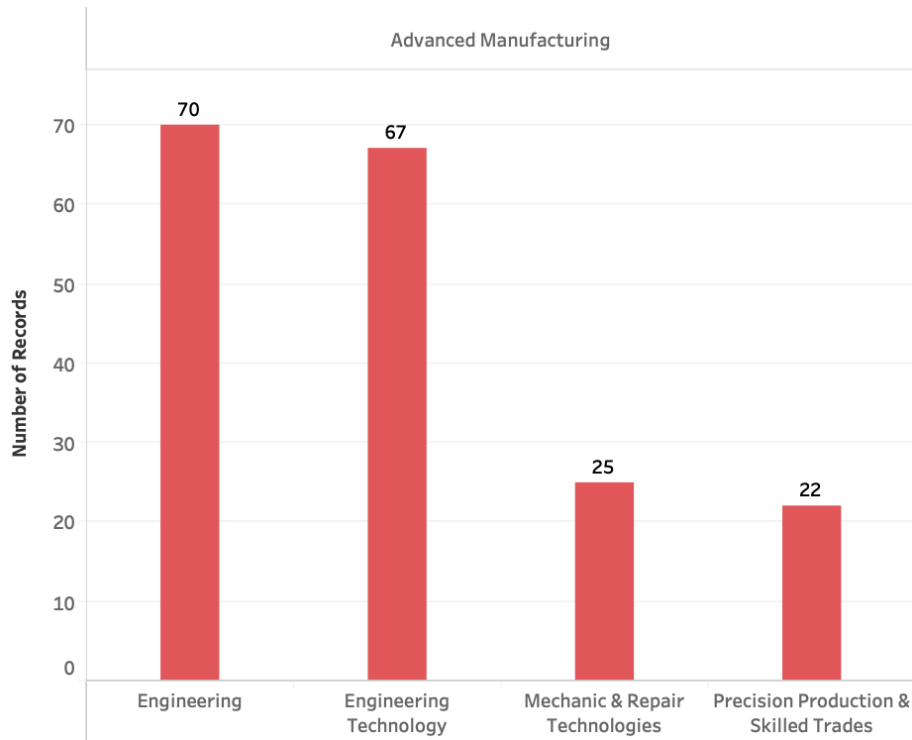
Type of Institution	Credential Type								
	Middle School Credit	High School Credit	Dual Credit	Apprenticeship	Certification	Associate	Bachelor's	Master's	Doctorate
Middle School	24								
High School		29							
Public Technical Center					13				
Craft Training Organization				3	1				
2-Year Public			5	4	35	20			
2-Year Private					3				
4-Year Public					6		14	13	11
4-Year Private							3		



GREATER BIRMINGHAM

# ADVANCED MANUFACTURING

## CREDENTIALS AVAILABLE BY SUB-CLUSTER



## CREDENTIALS AVAILABLE BY SUB-CLUSTER & TYPE

Cluster	Sub-Cluster	Credential Type								
		Middle School Credit	High School Credit	Dual Credit	Apprenticeship	Certification	Associate	Bachelor's	Master's	Doctorate
Advanced Manufacturing	Engineering		20			9		17	13	11
	Engineering Technology	24	5	3	1	23	11			
	Mechanic & Repair Technologies		3	1	1	12	8			
	Precision Production & Skilled Trades		1	1	5	14	1			



GREATER BIRMINGHAM

# ADVANCED MANUFACTURING

## PROGRAMS BY INSTITUTION

Type of Institution	Institution	Advanced Manufacturing				Credential Type
		Engineering	Engineering Technology	Mechanic & Repair Technologies	Precision Production & Skilled Trades	
Public Technical Center	Alabama Works Training Center		●	●	●	
	Blount County Career Technical Center (6000)			●		
	Career Technical Education Center (6010)		●			
	W A Lecroy Career / Technical Center (6000)	●	●			
Craft Training Organization	Birmingham Electrical JATC				●	
	Insulators Local No. 78				●	
	International Union of Operating Engineers	●				
	Iron Workers Local 92				●	
2-Year Public	Bevill State Community College		● ●	● ●	●	
	Jefferson State Community College		● ● ● ●	● ●	● ● ● ●	
	Lawson State Community College	●	● ●	● ● ●	● ●	
2-Year Private	Fortis Institute		●		●	
4-Year Public	University of Alabama (Tuscaloosa)	● ● ●				
	University of Alabama at Birmingham (UAB)	● ● ● ●				
4-Year Private	Birmingham Southern College	●				
	Samford University	●				

**Credential Type**

- Dual Credit
- Apprenticeship
- Certification
- Associate
- Bachelor's
- Master's
- Doctorate

## SUPPLY/DEMAND ANALYSIS

Advanced Manufacturing	Annual Openings 2016 - 2026	Total Completions 2015	Sub-BA Openings: Demand/Supply Ratio	BA Openings: Demand/Supply Ratio	Graduate Openings: Demand/Supply Ratio:	Status
Production	4,020	75	4.2	N/A	N/A	Shortage
Architecture and Engineering	586	885	0.3	1.9	0.3	Surplus

The supply/demand analysis above has been pulled directly from the Building (it) Together Report. According to this analysis, there is a shortage of Production-related graduates. When cross-referencing this with the charts above, we see that the Birmingham region has 14 certification programs and five apprenticeship programs related to Production occupations. It's also important to note that many Production occupations require only on-the-job training, which would not show up in the completions numbers.

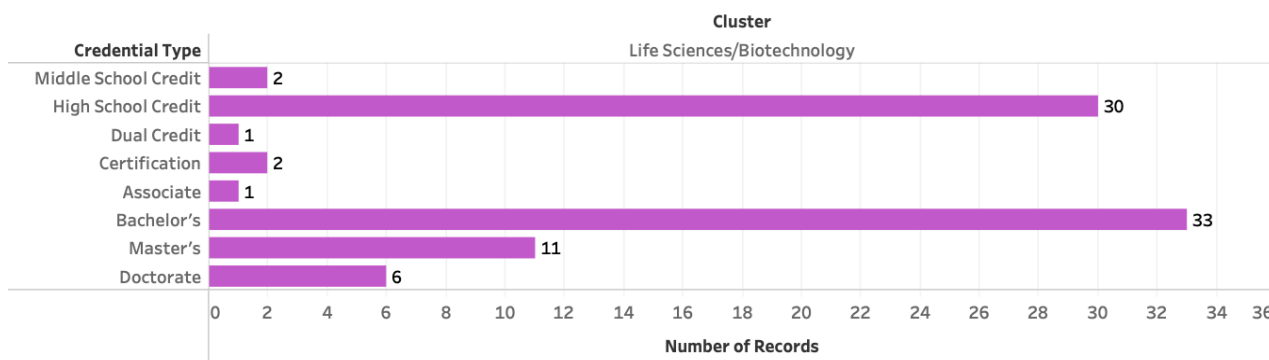
On the other side of the Advanced Manufacturing sector, Architecture & Engineering shows a surplus of workers available to meet demand. When we look at the number of programs available in this space, we see solid representation from certificate level programs all the way to advanced degrees.



## KEY FINDINGS

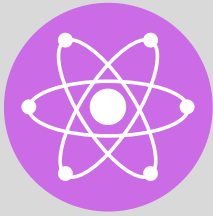
- Due to the high number of high school offerings, Animal and Plant Sciences are heavily represented in the overall numbers. However, opportunities at higher levels beyond high school are very limited in both fields.
- Of the three clusters analyzed, this one has the fewest number of short-term training opportunities. Of the postsecondary opportunities, nearly 93% are Bachelor's-level or higher.
- Only one of the three community colleges in the region offers programming related to this cluster.

## CREDENTIALS AVAILABLE BY TYPE



## CREDENTIALS AVAILABLE BY INSTITUTION TYPE

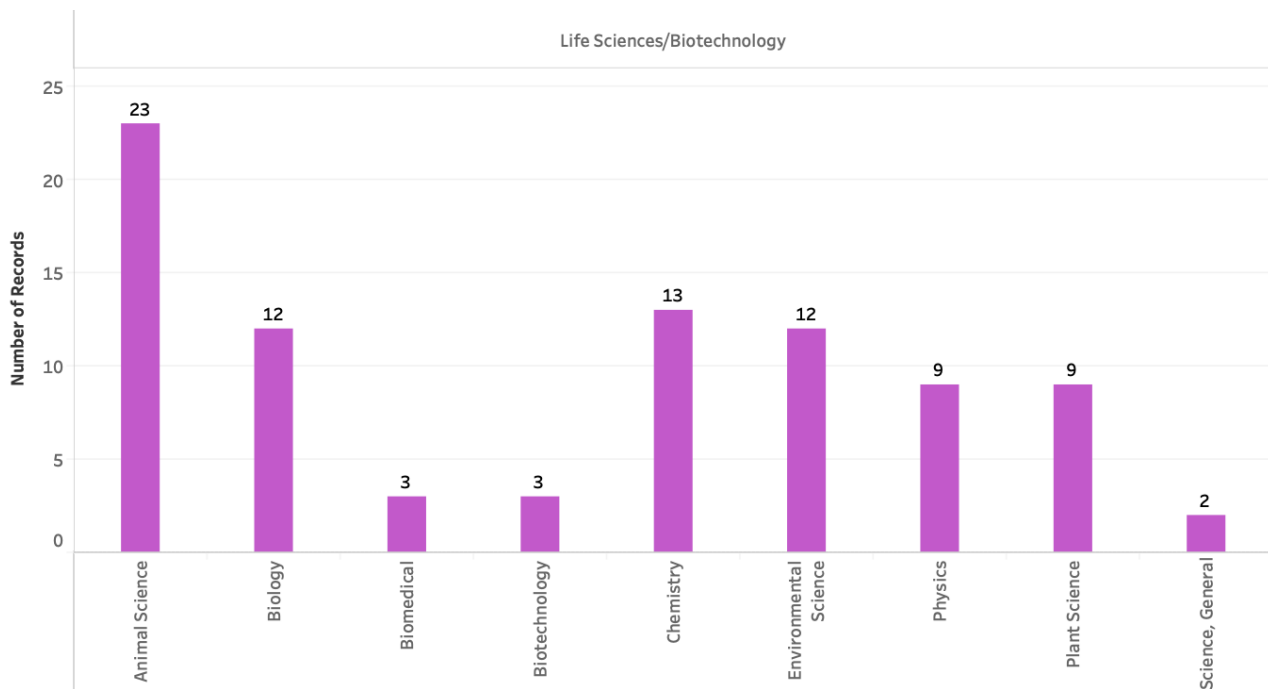
Type of Institution	Credential Type							
	Middle School Credit	High School Credit	Dual Credit	Certification	Associate	Bachelor's	Master's	Doctorate
Middle School	2							
High School		30						
Public Technical Center				2				
2-Year Public			1		1			
4-Year Public						18	9	6
4-Year Private						15	2	



GREATER BIRMINGHAM

# BIO-TECH & LIFE SCIENCES

## CREDENTIALS AVAILABLE BY SUB-CLUSTER



## CREDENTIALS AVAILABLE BY SUB-CLUSTER & TYPE

		Credential Type							
		Middle School Credit	High School Credit	Dual Credit	Certification	Associate	Bachelor's	Master's	Doctorate
Life Sciences/ Biotechnology	Animal Science	2	18		1		1	1	
	Biology						8	2	2
	Biomedical			1		1	1		
	Biotechnology						2	1	
	Chemistry						9	2	2
	Environmental Science		4				6	2	
	Physics						5	2	2
	Plant Science		8		1				
	Science, General						1	1	



GREATER BIRMINGHAM

# BIO-TECH & LIFE SCIENCES

## PROGRAMS BY INSTITUTION

Type of Institution	Institution	Life Sciences/Biotechnology									
		Animal Science	Biology	Biomedical	Biotechnology	Chemistry	Environmental Science	Physics	Plant Science	Science, General	
Public Technical Center	W A Lecroy Career / Technical Center (6000)	●							●		
2-Year Public	Jefferson State Community College			●							
4-Year Public	University of Alabama (Tuscaloosa)	●	●			●	●	●			
	University of Alabama at Birmingham (UAB)		●	●	●	●		●		●	
	University of Montevallo		●			●	●				
4-Year Private	Birmingham Southern College		●			●	●	●			
	Miles College		●			●	●				
	Samford University	●	●			●	●	●			

**Credential Type**

- Dual Credit
- Certification
- Associate
- Bachelor's
- Master's
- Doctorate

**Credential Type**

- Dual Credit
- Certification
- Associate
- Bachelor's
- Master's
- Doctorate

## SUPPLY/DEMAND ANALYSIS

Life Sciences/ Biotechnology	Annual Openings 2016 - 2026	Total Completions 2015	Sub-BA Openings: Demand/Supply Ratio	BA Openings: Demand/Supply Ratio	Graduate Openings: Demand/Supply Ratio:	Status
Life, Physical and Social Science	282	609	N/A	0.5	0.7	Surplus

The supply/demand analysis above has been pulled directly from the Building (it) Together Report. According to this analysis, there is a surplus number of completions to job openings in the Life Sciences sector. This makes sense, considering the region's wide array of Bachelor's or higher program options.

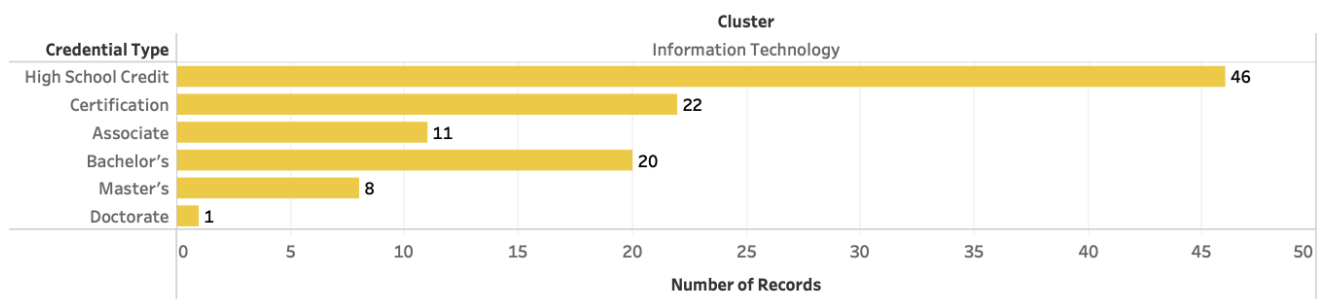
This surplus could indicate increased issues with talent retention among these graduates, who are likely forced to look outside of the Birmingham region due to a lack of job opportunities locally.



## KEY FINDINGS

- In Networking and Programming, there are limited higher level offerings, while in Computer Forensics there are limited lower level offerings.
- Of the three clusters analyzed, this one has the highest number of program offerings for high school students.
- Each of the three community colleges in the region offers certification and Associate degree options in this cluster.
- The Computer Networking sub-cluster has only one postsecondary program offering in the region.

## CREDENTIALS AVAILABLE BY TYPE

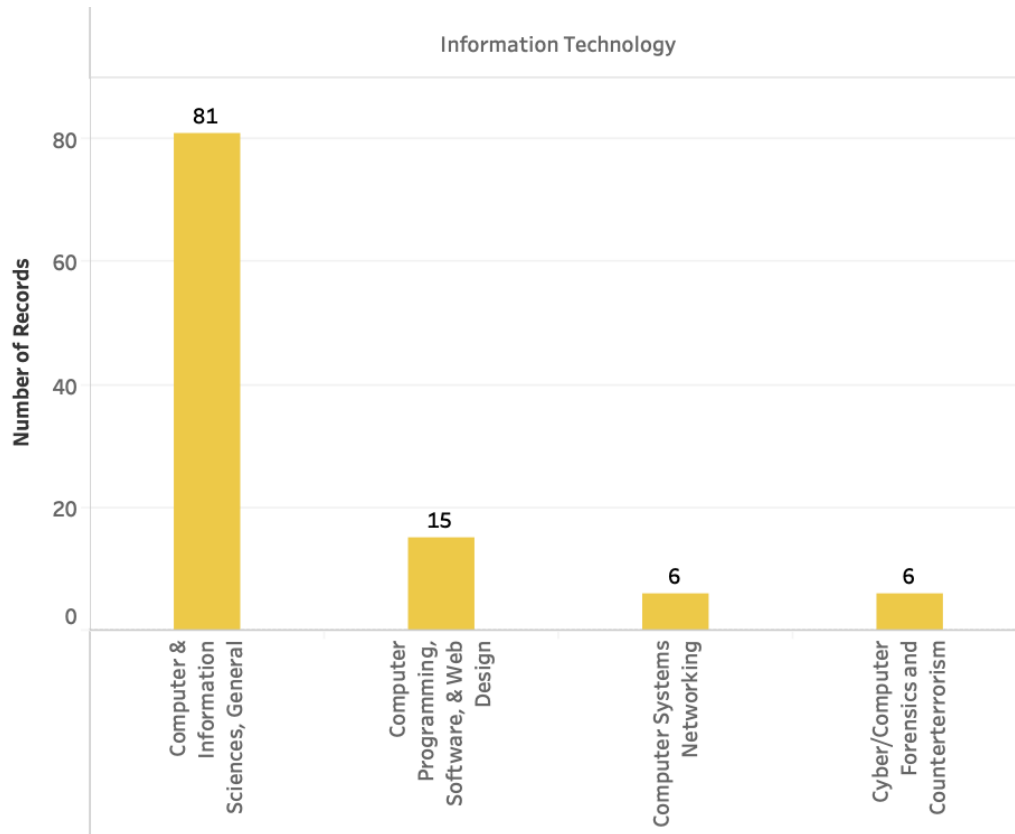


## CREDENTIALS AVAILABLE BY INSTITUTION TYPE

Type of Institution	Credential Type					
	High School Credit	Certification	Associate	Bachelor's	Master's	Doctorate
High School	46					
Craft Training Organization		4				
2-Year Public		11	6			
2-Year Private		1				
4-Year Public		2		7	6	1
4-Year Private		4	5	13	2	



## CREDENTIALS AVAILABLE BY SUB-CLUSTER



## CREDENTIALS AVAILABLE BY SUB-CLUSTER & TYPE

		Credential Type					
		High School Credit	Certification	Associate	Bachelor's	Master's	Doctorate
Information Technology	Computer & Information Sciences, General	37	7	10	19	7	1
	Computer Programming, Software, & Web Design	4	11				
	Computer Systems Networking	5	1				
	Cyber/Computer Forensics and Counterterrorism		3	1	1	1	





## PROGRAMS BY INSTITUTION

Type of Institution	Institution	Information Technology				Credential Type
		Computer & Information Sciences, General	Computer Programming, Software, & Web Design	Computer Systems Networking	Cyber/Computer Forensics and Counterterrorism	
Craft Training Organization	Covalence		●			Certification
	Innovate Birmingham	●	●			Certification
	TrueCoders		●			Certification
2-Year Public	Bevill State Community College	● ●	●			Associate
	Jefferson State Community College	● ●	●			Associate
	Lawson State Community College	● ●	●			Associate
2-Year Private	New Horizons Birmingham	●				Certification
4-Year Public	University of Alabama (Tuscaloosa)	● ● ●				Bachelor's
	University of Alabama at Birmingham (UAB)	● ●			● ●	Bachelor's
	University of Montevallo	●				Bachelor's
4-Year Private	Birmingham Southern College	●				Bachelor's
	Faulkner University	●				Bachelor's
	Herzing University	● ●				Bachelor's
	Miles College	●				Bachelor's
	Samford University	●				Bachelor's
	Strayer University	● ● ●			●	Bachelor's
	University of Phoenix	● ● ●		●	● ●	Bachelor's
						Master's

## SUPPLY/DEMAND ANALYSIS

Information Technology	Annual Openings 2016 - 2026	Total Completions 2015	Sub-BA Openings: Demand/Supply Ratio	BA Openings: Demand/Supply Ratio	Graduate Openings: Demand/Supply Ratio:	Status
Computer and Mathematical	927	433	2.0	8.4	0.3	Shortage

The supply/demand analysis above has been pulled directly from the Building (it) Together Report. According to this analysis, there aren't enough graduates with IT credentials to meet the demand in the Birmingham region. While there is a shortage at all three levels, Bachelor's degree completions represent the largest mismatch with employer demand. The education inventory uncovered 20 Bachelor's degree IT programs at area institutions, however 18 of those programs were categorized as part of the "Computer Sciences, General" sub-cluster. There were no Bachelor's Degree programs found in the "Programming" and "Networking" sub-clusters.

## KEY TAKEAWAYS

## KEY TAKEAWAYS

