A BUSINESS EDUCATION CURRICULUM FOR SPECIALTY TRADE CONTRACTORS

By

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ABSTRACT

The United States' construction industry is dominated by a sub-sector of small business contractors who are identified by the North American Industry Classification System (NAICS) as Specialty Trade Contractors. Specialty trade contractors perform specific work of a larger project; construction, electrical, heating and cooling, and plumbing are examples of specialty trade work. Within the specialty trades, there is a high rate of small business start-ups. Unfortunately, there is also a high rate of business failure. This project dissertation identifies educational deficiencies that may impede small business success and creates coursework to address those deficits. The project presented is a five-course community college business certificate that, when coupled with credit for prior learning for an apprenticeship or vocational certificate, can create an academic pathway for specialty trade small business owners to receive an associate degree in small business management.

Key Words: Specialty trade contractors, business curriculum, business certificate program

DEDICATION

This dissertation is dedicated to building trades small business owners who struggle to navigate the complexities of business management. I am honored to know so many men and women in the building trades who utilize their talent and skills in traditional American craftsmanship.

ACKNOWLEDGMENTS

The completion of this work would never have been possible without the support of faculty, friends, and family. First, I would like to express my gratitude to my advisor Dr. Sandra J Balkema, for her incredible guidance, motivation, and patience over the past four years of this program. I would also like to thank my husband, Justin, and his wonderful children. They provided support and encouragement when I needed it most. I would also like to thank Dr. Stephen Aquino, who helped keep me on track when I began to lose faith.

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CHAPTER ONE: INTRODUCTION

BACKGROUND AND MOTIVATION FOR THE PROJECT

Within the construction industry, there are endless stories of individual specialty trade small business owners who have attempted to become a one-person firm or launch a business as an independent contractor and failed due to poor business practices (Arditi, Koksal, & Kale, 2008). The United States' construction industry is a complicated labor market, making up about five percent of the Gross National Product and employing roughly eight percent of the U.S. workforce (Guvenen, Mataloni,Rassier, Ruhl 2016). The construction sector comprises establishments primarily engaged in the construction of commercial and residential buildings and public infrastructure. To collect and analyze data, the United States Census Bureau identifies industries through the North American Industry Classification System (NAICS). The construction industry is subdivided into the following categories:

Table 1. Construction Industry Classifications

Classification	Work Performed
General Contractor	Works in residential, commercial, and industrial construction.
Heavy Construction Contractor	Works with state or federal infrastructure projects like bridges, highways, water and sewage systems, and highways.
Specialty Trades Contractor	Works as a sub-contractor to the general contractor or the heavy construction contractor and performs one of several types of specific components of the construction project.

While there are many examples of small business failure within the three classifications, the research and project development for this dissertation will focus on the specialty trades contractor. The work performed by specialty trades contractors varies from trade to trade (see Appendix A, Table 1). The work is often sub-contracted by a general contractor who oversees the entire project. However, in some cases, especially remodeling and building repair, specialty trade work may be contracted directly with the owner of the property. Specialty trade contractors usually perform most of their work at the construction site, although they may have shops where they perform prefabrication and other work.

Establishments primarily engaged in preparing ground sites for new construction are also included in this sub-sector. According to the NAICS:

> The specialty trades contractor sub-sector comprises establishments whose primary activity is performing specific activities (e.g., pouring concrete, site preparation, plumbing, painting, and electrical work) involved in building construction or other activities that are similar for all types of construction, but that are not responsible for the entire project. The work performed may include new work, additions, alterations, maintenance, and repairs (U.S. Census Bureau, 2016).

HISTORY OF THE SPECIALTY TRADES

Understanding the historical background of the specialty trade contractor, the role that the building trade's culture plays in the pursuance of operating independently and the mindset of the individual is essential to accurate comprehension of the characteristics included in the makeup of the industry. In his 2009 book *Shop Class as Soulcraft,* Matthew Crawford identifies the relationship between skilled labor, creativity, and independence:

> Identifying creativity with freedom harmonizes quite well with the culture of new capitalism, in which the imperative of flexibility precludes dwelling in any task long enough to develop real competence. Such competence is the condition not only for genuine creativity but for economic independence such as the tradesman enjoys (Crawford, 2009).

Skilled tradesmen working as independent business owners became a standard practice in fourteenth century England: "The domestic system of industry then pertained; all trades were carried on by handicraftsmen, who were, or could become, their own masters, working with their own capital and tools in their own homes" (Watson, 1921, p. 72). The tendency for skilled tradesmen to become independent business owners carried on from Europe into colonial America:

> Building tradesmen in colonial America borrowed from the European guild system in their industry. Young apprentices were bound to a master craftsman until they learned the trade and reached adulthood. Upon completion of his term, an apprentice became a journeyman and could hire himself out freely. Ideally, a journeyman sought to become a master craftsman himself by obtaining enough capital to establish his own enterprise (Amesen, 2007, p. 313).

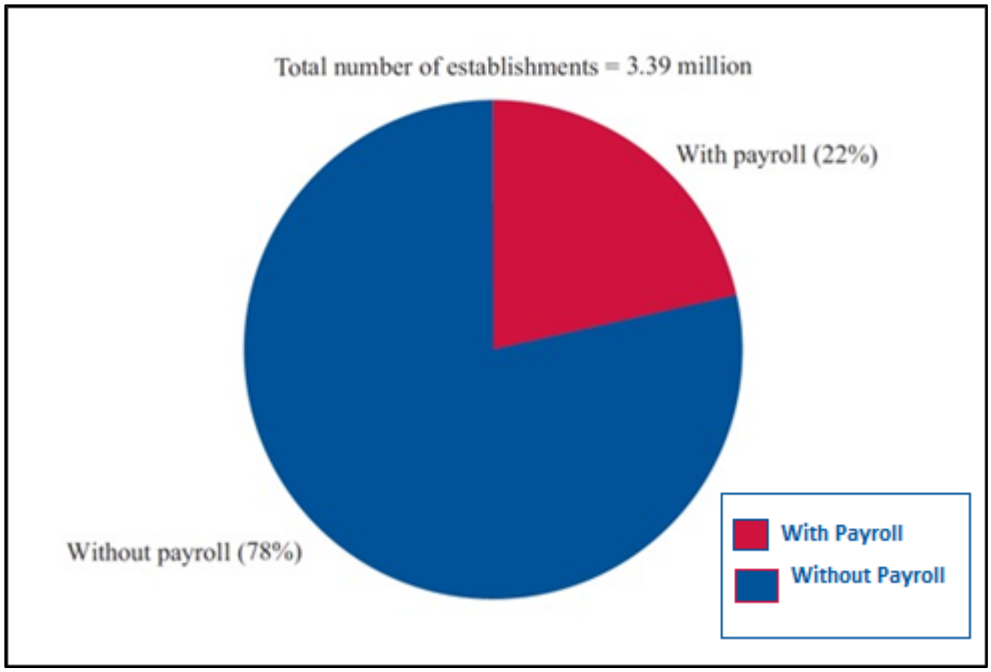
In Chicago in the 1880s, the construction industry was transformed by the first steel-framed skyscraper, the Home Insurance Building (Palladino, 2005). During this time, small construction businesses and specialty trade workmen dominated the industry. Work was inconsistent and highly competitive: "Any competent mechanic with a little money and experience could set up shop as a contractor" (Palladino, p. 14). Even at the turn of the twentieth century, it was evident that a specialty trade contractor could start a small business using their skill as the basis; however, business skills were

not a part of the education afforded to skilled tradesmen of the era. The need for a business education was apparent in this Journal of Domestic Engineering article from 1910: “What is needed in the plumbing business today is a master plumber who can combine the good qualities of a practical plumber with those of a practical businessman” (Moss, p. 94).

According to Gordon (2014), apprenticeship is the oldest form of vocational education in the United States. The colonialist brought the system with them from Europe and apprenticeship remained mostly unchanged until the 1930s. While apprenticeship was technically vocational education, it was not part of a standard school curriculum. The Fitzgerald Act —The National Apprenticeship Act— passed in 1937 and introduced government regulation into apprenticeship training, giving the United States Secretary of Labor the authority to establish standards and that regulated the employment and education of apprentices (p.10). The act also brought labor unions and industry together to form joint committees that further established training standards. These training standards address the apprentice’s ability to perform the technical work specified by the trade, but no preparation for owning or operating a small business is generally included in a building trade apprenticeship.

THE SPECIALTY TRADE SMALL BUSINESS OWNER

According to a 2016 report from the Center for Construction Research and Training, the number of non-employer construction firms in the United States still outweighs the number of establishments with more than one employee by more than 66 percent and the largest percentage of those firms are specialty trade contractors (CPWR, ch. 3). Small one-person firms are classified by NAICS as a non-employer establishment and defined as a firm that has no paid employees and has annual business receipts of one dollar or more, this individual would be subject to federal income taxes and not corporate taxes. A non-employer does not have to have a physical place of business outside of his or her home (CPWR, 2016). Most specialty-trade contractors list themselves as a sole-proprietorship, indicating they have no other employees on payroll, and the rest are small corporations and partnerships without paid employees. Sole-proprietorship firms make up 68 percent of all small construction businesses. There were 3.39 million construction establishments in total, of which about 2.66 million establishments had no payroll (CPWR, 2013).



Source: Reprinted from The Construction Chart Book: 2013, CPWR, The Center for Construction Research and Training.

Figure 1: Percentage of One-Person Establishments in Specialty Trade Construction.

Research indicates that the specialty trade contractor who is most often subject to failure is an individual, working by himself or herself. While there are larger firms with payroll and employees, the literature indicates that small-construction firm failure rates tied to establishment size. A 2012 study of the Great Recession by Harvard University Center for Housing Studies provides evidence that smaller construction companies are less likely to survive a downturn in the economy: “Business size is a significant indicator of failure or survival” (Will, 2007, p. 13). The study showed that seven out of every ten residential remodeling contractors with less than $100,000 in business receipts operating in 2007 were no longer in operation by 2012. The failure rate, while still high, drops sharply to one in four for the larger contractors in 2007 with five million dollars or more in receipts. Businesses surviving the Great Recession were, in fact, larger: 61.1 percent had receipts of $250,000 or more, while almost the exact same share of remodeling contractors that did not survive (62.1 percent) had revenues of less than $250,000 (Will, 2007, p.13).

FIRM BY SIZE AND TYPE

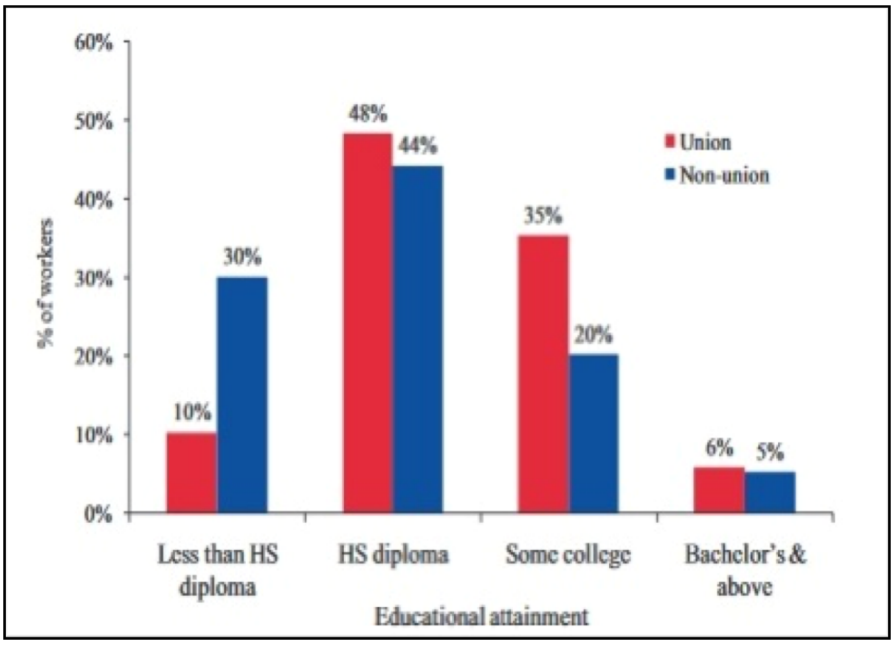
Choosing to incorporate or to remain a sole-proprietor can have an impact on businesses' long-term success. Topics covered in most basic businesses courses could support an understanding of the correct choice. A sole proprietorship is an unincorporated business, owned and run by one individual, with no distinction between the business and its owner. In these types of businesses, the business owner is entitled to all profits and is responsible for all the business debts. A sole proprietorship is the easiest way to start a small business:

> Many small contractors are sole proprietorships in which the owners and their companies are considered one and the same for tax and liability purposes. This is the simplest form of ownership and profits from the business flow directly to the owner's personal tax return. With this arrangement, the contractor assumes complete responsibility for any of the company's liabilities and his or her personal assets are at risk. (Atallah, 2006, p.132).

Many factors make this type of business ownership popular; taxes are reported through personal tax forms rather than filing as a business, regulations regarding these types of businesses are fewer as well: "Sole proprietors also have a lot of flexibility when it comes to their careers" (SBA.gov, 2013)

Specialty trade contractors can also create businesses that involve hiring and managing employees or working on a contract basis: "Only a moderate financial investment is needed, and it is possible to run the business from one's home, hiring construction workers only as needed for specific projects" (Applebaum, 1999, pp. 9-10). About one in four specialty trade small business owners hire employees and add the complexity of human resource management to their businesses.

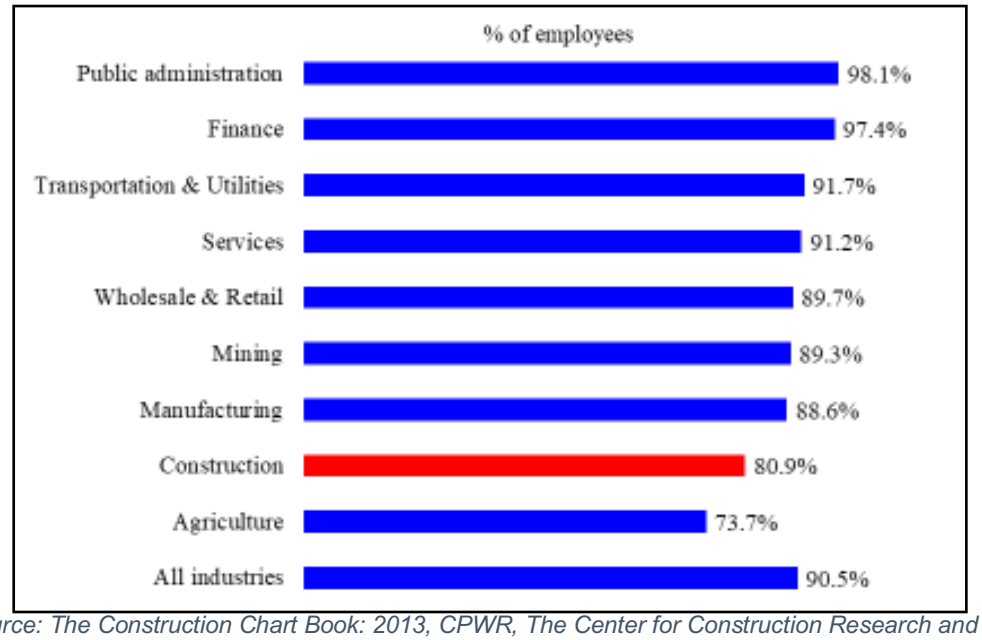
Studies show that educational attainment is a factor in an individual's lifetime earning potential. In the building trades, higher education is tied to higher income for both the laborer and the business owner. In 2010, a worker with some college earned nine percent more than those who were high school graduates, conversely, a 2012 United States Census Bureau survey of construction business owners shows that most small construction firm owners have a high school diploma, a GED, or less (CPWR, 2013). According to the Current Population Survey (CPS), a monthly household survey conducted by the U.S. Census Bureau for the Bureau of Labor Statistics, construction workers who are affiliated with a labor union obtain a higher level of education that those who have no union affiliation.



Source: The Construction Chart Book: 2013, CPWR, The Center for Construction Research and Training (s.3).

Figure 2: Educational attainment among construction workers, union and non-union.

The figure below details the relatively low number of construction business owners who have more than a high school diploma when compared to other industries. Research indicates that construction workers who are members of a labor union have slightly higher rates of educational attainment (CPWR, 2013, p. 25).



Source: The Construction Chart Book: 2013, CPWR, The Center for Construction Research and Training.

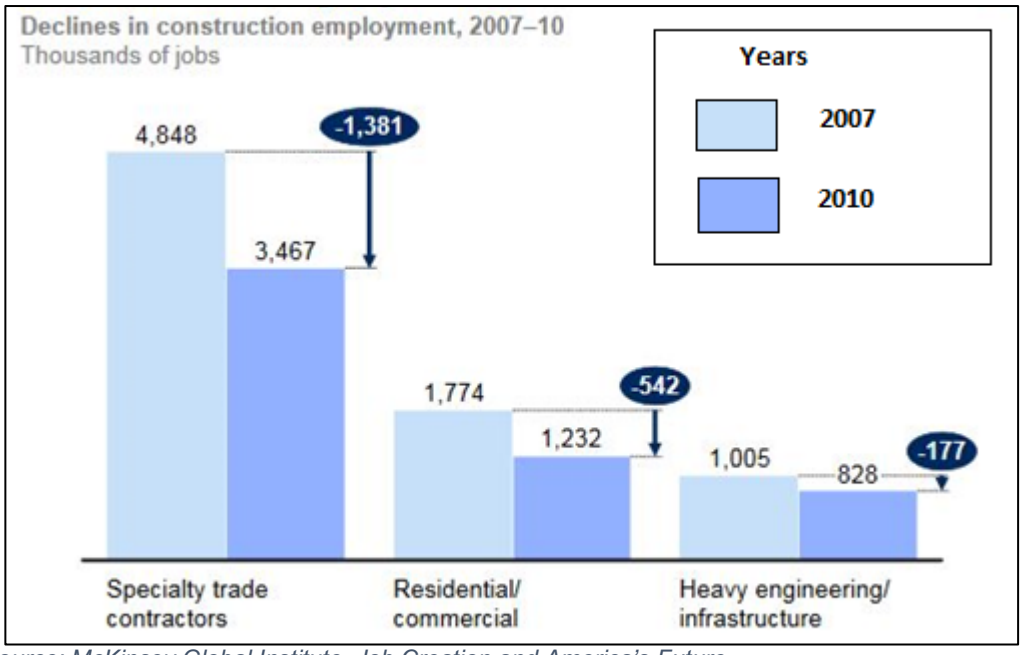
Figure 3: Employees with H.S. Diploma or Higher, by Industry, Bureau of Labor Statistics, 2010

Knight commented on this trend as early as 1983: "The craftsman is usually an individual who has developed a particular skill, usually in a larger firm, before deciding to start his own business" (p. 10). Research shows that the "craftsman entrepreneur" often lacks the business knowledge important for a small business owner: "The vast majority of small businesses are run by this type of individual" (Knight, p.13). The need for business education to manage a small business is not specific to the field of specialty trade contracting, most small-business owners could benefit from business education:

> If you're starting a retail nursery, it's likely you know plants and love everything about gardening. You more than likely have a degree in landscaping, horticulture, or botany as well. Many start-ups fail because the owners failed to realize the specialized skills necessary in managing a business. (Reynolds, 2012, n.p.)

A review of the impact of the Great Recession on the construction industry identifies the volatility in the market. For most industries, the economic downturn lasted from 2007-2009, but the decline in the United States Construction Sector began in 2006 and lasted until 2013, much longer than the recession itself (CPWR, 2016). In 2007, the number of construction small business owners in the United States was estimated at around 2,431,000. By 2010, that number had fallen by 10 percent to about 2,180,000. Many of the job losses were among individual proprietorships. A 2014 Census Bureau Business Dynamics

Statistics analysis of construction startups with less than four employees identify failure rates at more than 15 percent, one of the highest rates of all industries (2013, p.3).



Source: McKinsey Global Institute, Job Creation and America's Future

Figure 4: Job Losses in Construction, 2007-10

A 2007-10 study by Moody's Analytics, a company that studies capital markets and measures data to manage risk through credit analysis, economic research, and financial risk strategy, identified specialty trade contractors as the sustaining the largest number of job losses during the Great Recession (2010). While it is easy to correlate these job losses to the economic factors that sent the housing market into a downward spiral during that time, proper business education and business management skills may have mitigated some of these losses.

In contrast, the rebound from the recession has been significant, and the need for specialty skills is growing. Last year, the United States Bureau of Labor Statistics reported that 25 percent of all new jobs created were in the construction industry and that the specialty trades sector accounted for over 62 percent of that growth (Bureau of Labor Statistics, 2017). This year, a January, 2018 report from the Construction Employers of America indicated that residential construction and specialty trade contractors added 19,000 jobs in January and 88,400 jobs, or 3.3 percent, over the past 12 months. Construction

employment nationally now accounts for 6.88 million jobs, 4.4 million of which are in specialty trade small businesses (Jacobson, 2017).

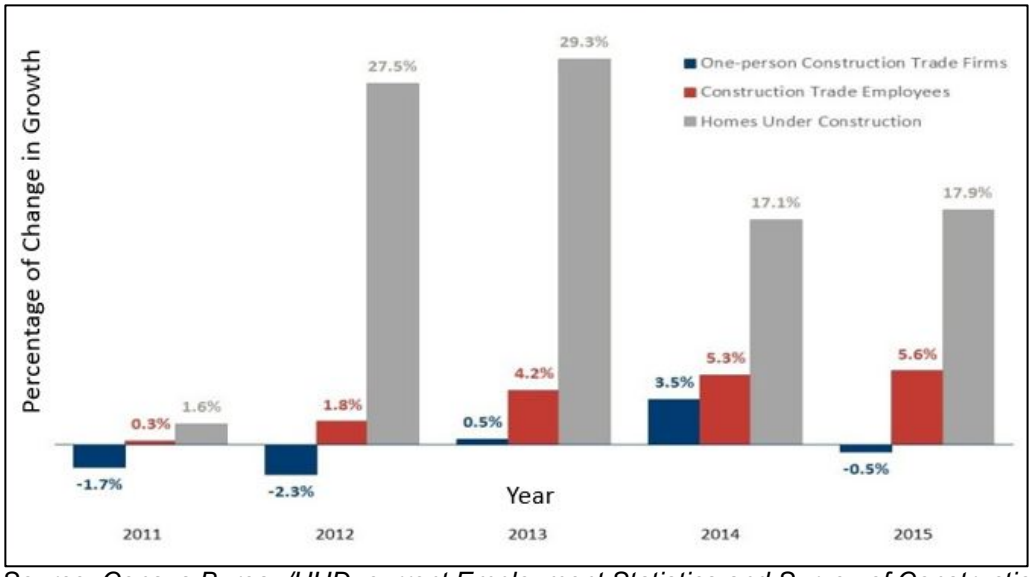
Six of the out of the ten fastest growing companies in the United States between 2012 and 2016 were construction companies (Biery, 2017). Specialty-trade contractor firms increased by 13.5 percent.

Table 2. The Ten Fastest Growing Industries in the United States, 2016

Industry (NAICS code)	Sales Change (percent)
1. Computer Systems Design and Related Services (5415)	18
2. Services to Buildings and Dwellings (5617)	14
3. Building Finishing Contractors (2383)	14
4. Residential Building Construction (2361)	14
5. Foundation, Structure, and Building Exterior Contractors (2381)	13
6. Other Professional, Scientific, and Technical Services (5419)	13
7. Building Equipment Contractors (2382)	13
8. Other Specialty Trade Contractors (2389)	13
9. Nonresidential Building Construction (2362)	13
10. Other Heavy and Civil Engineering Construction (2379)	13

Source: SageWorks, 2017

In addition, while there has been an increase in the number of firms, the number of contractors reporting themselves as self-employed has shifted over the last five years. Fewer individuals are interested in going into business for themselves. From 2010 through 2015, the number of homes under construction increased by 131 percent and the number of employees working in construction trade businesses increased by 18 percent. Over that span, however, the number of one-person construction firms declined by 0.5 percent (Emrath, 2018).



Source: Census Bureau/HUD, current Employment Statistics and Survey of Construction, 2017.

Figure 5: Change in Construction Trade Firms Related to Home Construction, 2011-15

This shift may suggest that workers had no alternative but self-employment during the economic downturn, and now workers prefer to take wage and salary jobs once the economy recovered (CPWR, 2016, p. 22). A study surveying the motivating factors and barriers for starting new construction business concluded that those surveyed felt the risks involved in a construction startup were too high, and therefore chose to work for someone else.

A possible interpretation of this finding may be that specialty tradesmen do not think the appropriate education to run a small business is available to them (Khoso, Siddiqui, & Akhund, 2017).

STATEMENT OF THE PROBLEM

Statement of Need

In the United States, few available programs address the specific needs of the specialty trade small business owner. In the United States, there are several State and Federal programs available to support small business owners, but none that address the specific business education needs of specialty trades construction. Construction Management programs are common in many community colleges and universities, but most of these programs focus specifically on the project management, construction

management and employee supervision aspects. In an article for Chronical, construction writer Jim Molis points to the problem:

> A construction company owner needs general business skills and industry-specific expertise. Like with any business, you must set your goals, create plans for achieving them and then efficiently execute your strategies. Your job duties as a construction company owner also include protecting against liabilities, securing contracts and managing projects. Build a profitable construction business by accurately bidding on projects, managing costs and delivering quality work that satisfies customers (n.d., n.p.).

The American Council for Construction Education (ACCE) provides guidelines and accreditation for construction education. These guidelines outline accreditation criteria for post-secondary colleges and universities. The organization's Standards and Criteria for Accreditation of Postsecondary Construction Education Degree Programs (2017) highlights the following items for program outcomes:

- Demonstrate effective communication, both orally and in writing.
- Demonstrate the ability to estimate quantities and costs for the bidding process in a construction project.
- Demonstrate the ability to schedule a basic construction project.
- Demonstrate the ability to use current technology related to the construction process.
- Interpret construction documents (contracts, specifications, and drawings) used in managing a construction project.
- Apply basic principles of construction accounting.
- Use basic surveying techniques used in building layout.
- Discuss basic principles of ethics in the construction industry.
- Identify the fundamentals of contracts, codes, and regulations that govern a construction project.
- Recognize basic construction methods, materials and equipment.
- Recognize basic safety hazards on a construction site and standard prevention measures
- Recognize the basic principles of structural design.
- Recognize the basic principles of mechanical, electrical and piping systems. (ACCE Standards, 2017, p.5).

It can be noted that these criteria focus on the needs of a general contractor or construction manager, and do not address the specific needs of the specialty trades contractor.

AVAILABLE COMMUNITY COLLEGE PROGRAMS

There are many building trade related education programs throughout the United States Community College and University Systems. I have provided an overview of some of the programs that focus on similar programs. Some of these programs grant college credit, some do not. Many recognize apprenticeship and journeywork by collaborating with trade unions to awarding credit. Some assign credit for prior learning to the trade specific training. None of these programs focus on the specific needs of the specialty trade contractor. There are a few programs, however, that work to collaborate closely with the building trades industry.

Ivy Tech Community College System of Indiana

Indiana has second highest percentage of apprenticeship completions in the country (U.S. Department of Labor, 2018). With 3,342 completers in 2016, Indiana is second only to California. Ivy Tech Community College is Indiana's largest public postsecondary institution and the nation's largest singly accredited statewide community college system serving nearly 200,000 students annually (Hess, 2018). The College system has a unique relationship with the Indiana State Department of Workforce Development, which supports much of the educational funds for these apprenticeships through a state grant.

In 1993-94, Ivy Tech collaborated with the union building trades to develop an Associate of Applied Science degree in Apprenticeship Technology. This degree is a working partnership with each local Indiana local building trade union's Joint Apprenticeship Training committee (JATC) and the local Ivy Tech Community College. Under the agreement, the labor union, which provides the technical training and Ivy Tech, provides the general education courses to complete the associate's degree. The program is the largest of its kind in the country. Ivy Tech has Apprenticeship Programs in the following specialty trades:

- Boilermakers
- Bricklayers
- Carpenters
- Electricians

- Elevator Constructors
- Glaziers
- Heat & Frost Insulators
- Iron Workers
- Millwrights
- Operating Engineers
- Painters
- Plumbers and Pipefitters
- Electrical Lineman
- Sheet Metal Workers
- Teledata Technicians

While Ivy Tech provides extensive training for those who will become specialty trade contractors, the focus of the training is technical and does not include small business management (McGowan, 2017).

Washtenaw Community College: The United Association of Plumbers and Pipefitters

At Washtenaw Community College (WCC), there is a long history of College and Building Trade Union partnerships. The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada (UA), affiliated with the national building trades, represents approximately 360,000 plumbers, pipefitters, sprinkler fitters, service technicians and welders in local unions across North America. The UA also has reciprocal agreements with the Australian Plumbing Trades Employees Union (PTEU) and the Irish Technical, Engineering Electrical Union (TEEU). Since 1993, WCC has hosted the UA Instructor Training Program at the College's Ann Arbor campus. Twenty-five hundred members of the UA attend the Instructor Training Event every year, most seek to complete a college degree. The College provides five associate degree programs to support the UA members who are pursuing continuing education opportunities (Washtenaw Community College, n.d.). These focus on supervision and professional instruction skills, but do not place an emphasis on small business management for the specialty trade contractor. Although the Higher Learning Commission accredits these

programs, no third-party accrediting agency like the American Council on Construction Education is involved. The building trade programs that WCC provides include (1) Construction Supervision, (2) Journeyman Industrial, and (3) Industrial Training.

Construction Supervision: These programs are designed for individuals who, most often work in a larger firm with several positions. The programs focus on supervision and project management skills. There is some information pertaining to human resources management, contracts, and other legal issues, but not with a small business management focus. The construction supervision certificate and degrees include the Construction Supervision Associate in Science Degree, the Construction Supervision Associate in Applied Science Degree, and the Construction Supervision Certificate.

Journeyman Industrial: This program is designed for individuals who want to utilize their apprentice and journeywork experience to obtain a college degree. The program is flexible, allowing individuals to utilize their specific trade experience as elective credit. The degree option for Journeyman Industrial is the Journeyman Industrial Associate in Applied Science Degree.

Industrial Training: This program area is for select UA instructors participating in the Instructor Training Program held each August at the main WCC campus in Ann Arbor, Michigan. The program offers professional and technical classes related to trade teaching in the United Association (Washtenaw Community College, 2018). Two associate's degrees are available through this program: the Industrial Training Associate in Applied Science Degree, and Industrial Training Associate in Science Degree

Non-Credit Programs

1. Temple University – Fox School of Business

At Temple University in Construction Management Certificate Series is a 9-month series of classes designed to provide business management tools to existing and aspiring independent contractors. Participants who complete the series will earn a Special Certificate of Completion from the Temple University Fox School of Business and the Small Business Development Center (Temple University, n.d.). Course topics include the following:

- Business Management
- Construction Blue Print Reading

- Methods & Materials
- OSHA Regulations
- Quantity Take-Off & Cost Estimating
- Project Scheduling & Budgeting
- Accounting for Contractors
- Loans
- Contract Administration & Control
- Contract Law
- Pre-Business
- Insurance & Bonding

Louisiana Community & Technical College System

The Louisiana Contractors Accreditation Institute, in a partnership between Louisiana Economic Development, Louisiana Community & Technical College System and the Louisiana State Licensing Board for Contractors provides an educational program for small construction businesses that is online and focuses on the needs of the specialty trade or small construction business owner. *The Louisiana Contractors Accreditation Institute (LCAI) Business and Law Seminar* provides small construction businesses information about construction management and operating a construction related business (Lousiana Economic Development, n.d.). This course is recommended by the ACCE. The course, taught by industry leaders, consists of a six-week course, with two-hour sessions twice a week that is offered using interactive distance learning to multiple locations throughout the state. The topics covered in the program include the following:

- Bid Process
- Contract Management
- Estimating
- Equipment Management
- Scheduling

- Occupational Safety
- Risk Management
- Financial & Business Management
- Bonding/Access to Capital
- Certifications and Available Resources
- Entrepreneurship Training

While this program is similar to the one designed for this dissertation, the LCAI Business and Law Seminar does not provide college credit for the program.

FEDERAL PROGRAMS

Small Business Administration

The U.S. Small Business Administration provides detailed information for entrepreneurs. The agency was created to "maintain and strengthen the nation's economy by enabling the establishment and viability of small businesses and by assisting in the economic recovery of communities after disasters" (SBA, 2017). The SBA funds nearly one thousand small business development centers around the country. The centers are generally located near community colleges or state university centers. The centers and online educational programs provided by the SBA do not focus on specific business needs, but rather address the needs of the individual business owner. The SBA has small business products and services designed for minorities, women, veterans, and low-income small business owners. Since its inception, the SBA has come under scrutiny with allegations of waste, fraud, and abuse. A 2011 report from the CATO institute noted:

> The SBA has become one of the government's chief instruments for pursuing affirmative action, which has led to numerous scandals. Successive administrations used the agency to direct lending and federal contracts to minority-owned firms. Although stamping out discrimination is a laudable goal, the SBA's set-asides have bred corruption and abuse. (n.p.)

The SBA does provide some information to small business owners regarding applying for and obtaining government loans, and government contracts. However, the programs do not provide education or support in the day-to-day business operations of a small construction or specialty trade firm.

Need for a Program Specific to Specialty Trades

Within the construction industry, small business success is tied to a comprehensive understanding of business processes. Like other types of small business organizations, building trade businesses need to review and update business practices to match the changing environment (Jackson & Hancock, 2010).

Research shows that owners of small firms with little business experience or education have the highest rate of failure, emphasizing the following: “The financial success and the survival of any construction firm depends almost entirely on the quality and expertise of its management” (Clough, Sears, Sears, Segner, & Rounds, 2015, p. 46). Studies seeking to identify the reasons and combinations of reasons why construction companies fail often cite the following (Bauer, 1978; Foust, 1983; Clough, Sears, Sears, Segner, & Rounds, 2015):

- Lack of business knowledge
- Lack of managerial experience
- Poor accounting system
- Insufficient capital
- Inability to be competitive, especially when doing work in a new region
- Heavy operating expenses
- Lack of early warning measures
- High employee turnover
- General economic conditions.

External factors cited for business failure include seasonal business variations, weather hazards, job delays, inadequate sales, competitive weaknesses, low profit margins, cash flow difficulties of all kinds, and overextension. While many of these factors may be out of management control, some can be traced to poor business management.

Research from Becker, Sanvido, Kufahl, Elston, & Woodard (2014) indicates that both students and employers in the specialty construction sector desire greater inclusion of management content as part of construction curricula (p.19). Ashmore (1986) discusses the connection between vocational

education studies and independent business ownership and suggests that entrepreneur education be added to vocational training:

> Vocational education has always been dedicated to preparing its graduates for employment in the workplace—typically in existing businesses. Students learn job-specific and employability skills and are given opportunities to use these skills through work experience programs that connect them with the business community. These experiences help students form a base of knowledge about the function and operation of a business and develop some level of familiarity and comfort with the business environment — two basic elements of entrepreneurship. Vocational educators have come to recognize that starting a business is a natural outgrowth of vocational skills training. (p. 28-29)

There are many construction management, project management, or construction supervision educational programs in the United States. There are also many avenues to obtain a specialty trade education. There are organizations that set standards for construction management for degree programs in both the University and Community College setting. Although these types of programs are widespread, they are designed to address the needs of general construction management within a much larger firm, not the specialty trades small business owner. In addition, these programs are often designed as stand-alone degree programs, when more than 70 percent of all specialty trade workers are trained through a union labor-management training agreement (Owens, 2017).

The American Council on Construction Education (ACCE) also details the importance of inclusion of business management in construction education:

> To be an effective manager, the Constructor must know how to manage the principal resources of the industry, i.e., people and money. The Constructor should have a broad understanding of the fundamentals of the free enterprise system, accounting, finance, business regulations, contract law, labor law, and marketing. (American Council on Construction Education, 2014, p. 5)

Outside education, other resources are available to educate and support small business owners. The United States' Small Business Administration (SBA) is designed to support to small businesses. The mission of the Small Business Administration is "to maintain and strengthen the nation's economy by enabling the establishment and viability of small businesses and by assisting in the economic recovery of communities after disasters" (Small Business Administration, 2012, p. 1). Within the content available from the SBA, there is some information created to address the construction industry, but it does not address the specific needs of specialty trades (Beesley, 2013).

Goals and Objectives of this Project

A curriculum designed specifically for specialty trades small business owner with no formal business education would provide the education necessary for an independent contractor to understand the complexities of owning and operating a small business. Recent changes in the perception of apprenticeship and skilled trades training have prompted government agencies to encourage community colleges to articulate apprenticeships and journey worker experience to college credit for prior learning (Hanks, 2016). Currently, hundreds of community colleges in the United States provide between 30 and 60 college credits for students who have completed an apprenticeship program (United States Department of Labor, 2014). Utilizing the college credit received from an apprenticeship or prior journeywork as a pathway into a degree in small business management is a natural transition (Mathur, 2015). This project will create a certificate program that, depending on the college, could build on the credit for prior learning individuals can receive for their specialty trades apprenticeship or continued journeywork, so individuals could receive an associate degree at the time they complete their apprenticeship training.

The research cited in this dissertation regarding the skills necessary to successfully operate a small business identifies the course content necessary for specialty trade contractor business success. Foust (1983) and Knight (1983) identify the knowledge of operations, human resource management, and legal issues as essential to small business success. Financial literacy is also recognized as a critical component to the survival of an organization (Blacharski, 2017).

Structure of this Dissertation

This dissertation is organized into six chapters. Chapter One, the Introduction, provides historical information and business elements specific to a specialty trades contractor. This information is designed to provide the reader with the necessary background and context for the basis of the project. In Chapter Two, a comprehensive review of the literature regarding the success and failure of the specialty trade small business is provided. The definitions of terms unique to the construction industry are also introduced in this chapter. Chapter Three describes the methodology behind the curriculum and course development. Chapter Three also summarizes the causes of failure and identifies content that has been

developed into curriculum to mitigate those causes. In Chapter Four, the details of the coursework for the business education program presented, broken down by individual courses. Finally, Chapter Five is a detailed implementation plan, conclusions and further implications of the project.

SUMMARY

The specialty-trade construction industry is unique and complex. Small business owners will face several challenges. From implementing processes and procedures to effectively manage daily operations, to understanding finance and contractual law, owning and operating a company takes more business experience and knowledge than is currently included in college level vocational training.

A business education program developed specifically for this industry can help owners face those challenges. This *Business Education for the Specialty Trades Contractor* certificate program will provide students with the information, skills, and experience they need to be successful. The increase in the specialty-trade construction sector demands an increase in the number of specialty trade small business owners. Research shows that these individuals will need an understanding of small business management skills. Business owners should be capable of managing the construction projects and understand how performance affects business success. Managing a construction project as a small business owner is a different process than working within a larger firm. Apart from developing skills for project management, owners must assume the responsibilities for the planning, communication and financial control of, not just the project, but also the entire business. Research shows that business management education is a contributing factor to small specialty-trade business success. The American Community College system has a long and synergistic relationship with specialty trades education, skilled trades, and building labor unions. The relationship provides a clear opportunity for the development of a scalable small business management program that could be adapted to community colleges across the United States.

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

There is a risk of business failure exists in every area of the construction industry. The specialty trade small business sector is no different. In the United States, it is relatively easy and inexpensive to start up a specialty trade small business, making it a viable and attractive option for many. However, there is a high level of competition and unpredictable fluctuations in construction volume make construction companies particularly vulnerable to business failure (Arditi, Koksal,& Kale, 2008). There is little research addressing the effect of small business education on the failure or success of specialty trade small business. The purpose of this literature review is to establish a connection between education and specialty trade small business success. Much of the research that is available uses the terms entrepreneurial education and small business management education interchangeably. While there are overlaps between the two, the available research regarding entrepreneurial education it is more appropriate to analyze the creation of new business (Lazear, 2005, p. 649).

There is a great deal of literature that examines business failure in the larger context of the construction industry, and that failure is often attributed to a lack of business and financial operational knowledge (Schaufelberger,2003; Wong, 2010; Arslan & Kivrack, 2008). This literature review identifies a definition of business failure through legal, historical, and industry-based research. This review uses that research to determine the focus of the coursework developed for the *Business Curriculum for the Specialty Trade Contractor*.

DEFINING BUSINESS FAILURE

The definition of business failure varies. The Law Dictionary defines business failure as:" A company ceasing its operations following its inability to make a profit or to bring in enough revenue to

cover its expenses. The final step is always that the business runs out of cash" (Thelawdictionary.com, 2016, p. 1).

Pretorius (2009), at the end of his review of business failure, proposed a universal definition for the failure phenomenon: a venture fails when it involuntarily becomes unable to attract new debt or equity funding to reverse decline; consequently, it cannot continue to operate under the current ownership and management. Failure is the endpoint at discontinuance (bankruptcy) and when it is reached, operations cease, and judicial proceedings take effect (Pretorius, 2009). Dun & Bradstreet (2011) define business failure as "a company that obtains legal relief from its creditors, ceases business operations without paying all its creditors in full, voluntarily withdraws from business operations and leaves unpaid obligations, goes into receivership or reorganization, or makes an arrangement for the benefit of creditors" (pp. 4-5).

External and Internal Causes of Business Failure

External and internal factors, or a combination of both, can affect the success and failure of a business (Lukason & Hoffman, 2015). It is important to review the research on these factors because education may help a small business owner recognize and navigate some of the external risks and a greater knowledge base can help business owners mitigate internal mistakes.

External Causes of Business Failure

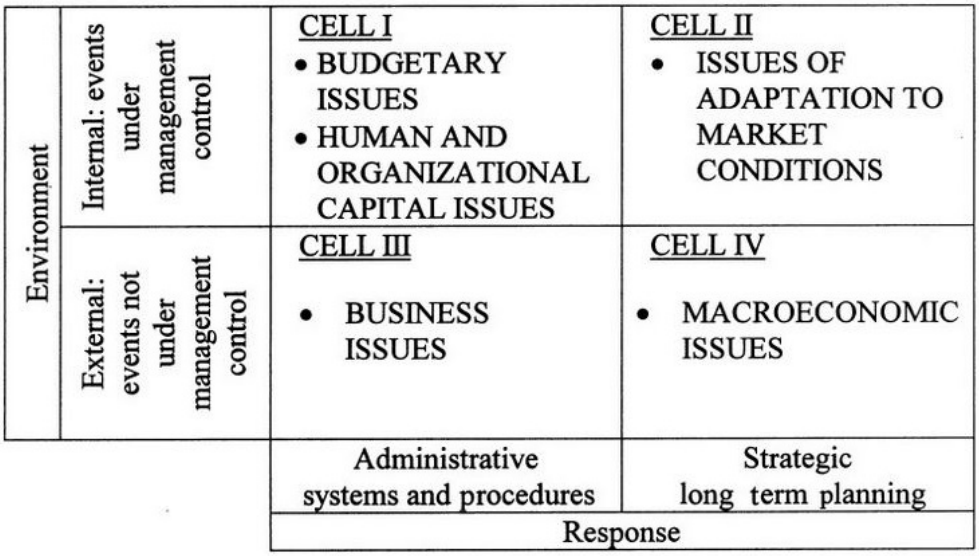
The research defines external factors in business failure as those that a small business owner has no direct control or influence over. Studies (Foust, 1983; Arditi, Koksal, & Kale, 2000; Kivrack & Arsian, 2008) identify the following external risk factors associated with construction business failure:

- Increases in material costs
- Economic downturns
- Increases in interest rates
- Competition
- Weather

Arditi, Koksal & Kale (2008) also include Acts of God, identifying natural disasters as an external factor (p. 11).

Internal Causes of Business Failure

Internal causes of business failure are identified as those events or actions that are under management control (Lukason & Hoffman, 2015). Most of the studies done the commonly cited cause of small businesses failure is poor management. Although it is not easy to recognize what constitutes poor management, most small businesses problems are characterized as managerial.



Source: Business failures in the construction industry: https://www.researchgate.net/Environment-response-matrix-distribution-with-failure-factors_fig3_229874629

Figure 6: Environment / Response Matrix, Distribution of Failure Factors

In a 2017 study by Hasbini, researching the causes of business failure of building trade contractors, both internal and external factors were studied. Hasbini identified a unique set of risks associated with the building trade industry. Of those, fluctuating home values, project scheduling issues, and financial complexities of the building process were highlighted. Other causes of business failure included a lack of operating capital, a lack of cash flow management, and the owner's inability to estimate and price out the projects effectively. Of all the factors studied, business education was key in business success:

> The distinction between builders that failed and those that survived in our group was very clear when it came to the business and financial education and training at the leadership level of those organizations. Our data reflected that 87 percent of builders that survived either had a background in accounting, finance, economics, or assigned that role to a key executive at the highest level to help them manage, analyze, and strategize the financial side of the business. Of those that failed, 94 percent were trained in fields other than business, and some did not place a serious emphasis on the financial side of the operations. (Hasbini, 2017 p. 73)

In a study specifically examining the causes of construction business failure, Arditi, Kale, & Kolsal (2008) found budgetary and economic issues were behind 83 percent of all construction company failures. The research indicated that business owners who understood how to read and react to economic fluctuations and manage budgets accordingly could avoid failure: “This implies that administrative measures to fend off internal conflicts that originate for reasons beyond management's control and long-term strategic decisions to regulate the firm's adaptation to market conditions can also help to prevent failure” (p.120).

A 2009 article from the University of Texas identified specialty trade contractors as one of many groups of technically trained individuals who chose to start a small business, assuming the technical skills will be enough to run the business: “It is common for a competent technician to decide to go into business to harvest the benefits of their technical skills. Auto mechanics, air conditioning technicians, electricians, plumbers, and skilled construction workers are examples of individuals who believe that they can improve their lifestyle by owning their own business” (Atamian, Wagman, & VanZante, 2009, p. 33). The study identified a lack of owner knowledge of business processes as a cause of business failure.

In similar studies (Gaskill, Van Auken, & Manning, 1993; Theng & Boon, 1996), researchers found that internal factors, primarily the owner manager’s lack of business understanding, failure to plan, and financial illiteracy were contributing factors to business failure. These studies, however, did not research the level of business education of the small business owner. Research is consistent in showing that external factors involved in business failure can be mitigated by business knowledge, and that the strategic implementation of a business plan is often key to overall business success and the failure to do so can impact the business outcomes (Campbell, 2005; French, Kelly, & Harrison, 2003).

In 1986, a study by the University of Pittsburgh and the Pennsylvania Department of Education Bureau of Vocational and Adult Education surveyed small business owners and vocational instructors in Pennsylvania to determine if basic business education should be included in vocational education. The

small business owners surveyed for this study responded positively in favor of the inclusion of some business education 87percent of the time. The study rationalized that students enrolled in vocational courses were likely to become small business owners and therefore should have a business curriculum in additional to the vocational coursework (Palmieri & Vecchiola, 1987). While none of these studies provided conclusive data reflecting the positive impact of a business education to a small business owner, the studies did show business owner's attitudes toward higher education.

Research indicates that there is a strong correlation between a small business owners' advanced education and the success of small business (Chandler & Hanks, 1994). Likewise, Wiklund & Shepherd (2003) and Frei (2003) suggest that new companies need an in depth understanding of business strategy and this knowledge is often the result of education or experience. Additional research indicates that small business owners do not understand or have the background knowledge of management and business tend to fail at a higher rate that owners who have a greater understanding (Flores, Ucbasaran, Westhead, & Write, 2010; McFarland &McConnell, 2011). Research by Mazzarol, Reboud, & Soutar (2011) indicates there is a strong relationship between business knowledge and overall organizational performance.

EDUCATIONAL ATTAINMENT

Davids (1963) reported that business owners attested to the value they had found in their own education and to the specific help certain types of education had given them in starting and operating their businesses. At the same time, he reported that lack of knowledge in accounting, bookkeeping, general business, and advanced education put the owners at a disadvantage in their business operation (p. 60).

Kiesner (1984) attributed 80 percent of all small business failures to inadequate planning, poor accounting, inadequate control mechanism, inability to read and understand financial statements, and the inability to accept technical and economic advice: "That is the absence of sound business education and training" (p. 17). In a 1995 study done by Shank & Ball, finance and accounting, management and marketing were found to be necessary areas of education for business success.

An independent survey of 171 small business owners indicated that they perceived their college education as instrumental in their ability to run a small business (Al-Zubeidi, 2005). Of the respondents,

75 percent agreed that college education enhanced their business skills and knowledge, and 69 percent agreed that attending college helped them run the business. In addition, 52 percent agreed that college education helped them identify business problems and 87 percent agreed that college education gave them a better opportunity for growth (p. 100).

A later study, also provided by a Dun and Bradstreet (2016) report, discusses economic downturn in the construction industry following the United States Great Recession of 2007, which caused the greatest number of construction failures and job losses to the Specialty Trade Construction market in nearly a decade. The report identified the major causes of business failures during this time as economic factors, but also cited inexperience, poor sales, expense, customer issues, fraud and neglect, asset and capital issues, and disaster. These studies convey that both internal and external factors can impede business success.

Business owners require knowledge and special skill sets to succeed in today's competitive business landscape and can benefit from business planning (Chrisman & McMullan, 2004). In the United States, many individuals start companies without the information they need to compete and stay in business (Townsend, Busenitz, & Arthurs, 2010). It has been estimated that two thirds of small business failures are due to the incompetence of the owner-manager (Cadden & L.Lueder, 2017).

A 2014 study by the Turnaround Management Society identified a lack of business knowledge was at the core of most failures, the study cited lack of strategy and vision, poor communication, and a lack of education as leading causes in most company failures. In the United States, a business education background is not necessary to open a small business; anyone with an idea and some semblance of a plan can attempt to start their own company, unfortunately most are not ready.

Previous research has identified several areas of business knowledge, which, if understood, may be impactful to overall business success. A study by Clark (1994) indicates that business owners must have some understanding of basic business knowledge to be successful. Similarly, a study by Al-Zubeidi, in Austin, Texas, concluded that there was a connection between business success and a business education: "An important conclusion of this study is that the often-argued relationship between college education in general, and education in business in specific, and small business success continues to be

critical. Such importance is evident in the continuing need for learning to cope with rapid technological advances, competition, and the changing global economy" (2005, p. 115).

The Educational Needs of the Specialty Trade Small Business Owner

Specialty Trade contractors have a unique set of responsibilities that should be addressed along with general business needs. The work includes more than simple small business management. The owner is also responsible for sales, safety, licensure, insurance, and the knowledge of state and federal building codes and regulations: "It is the role of the construction contractor to coordinate all of these activities into an effective and profitable plan of action for the operation of the enterprise (Clough, Sears, Sears, Segner, & Rounds, 2015, p. 63).

General Business Education

Financial Education

Research by Dahmen and Rodriquez (2014) regarding the impact of financial literacy on the success of small business owners in Southern Florida, found that business owners who did not understand how to interpret their financial statements experienced a high level of difficulty: "Our study clearly suggests that small business owners would be well advised to master financial literacy, including the financial ratios that allow an understanding of their financial statements" (p. 9).

Much of the research available regarding financial knowledge and the small business owner focuses on obtaining access to financial resources. However, the knowledge needed to manage financial resources is of equal or greater importance that raising capital for a new company (Karadag, 2015). This suggests that owners did not have a clear understanding of basic accounting practices.

Legal Education

Legal knowledge in the areas of real estate, contract, and business structure are essential for small business owners. Mofokeng (2012) emphasizes that understanding legal knowledge associated with structural liability, licensing, and building regulations are specific to the construction trade. Steingold (2005) mentions choosing a legal entity, tax law, licensing and permits, and contract law regarding the legal knowledge a small business owner should obtain: "knowing how the law affects your business can

help you avoid many costly risks. More and more, the law affects every aspect of a small business operation, from relationships with landlords, customers, and suppliers to dealings with governmental agencies over taxes, licenses, and zoning" (p. 2).

Marketing Education

In a study of small manufacturing firms, Moller and Anttila (1987) found that the marketing capabilities of a small business had a positive influence on the overall success of the firm. The report cited environmental scanning and competitor analysis as two significant aspects of marketing aptitude. This is supported by Steingold (2005), who mentions customer satisfaction, advertising, and surveys as marketing knowledge that might support the success of a small business.

In today's business environment, a small business owner must understand how to use social media and the internet as marketing tools. A study by Mokhtar, Abu Hasan, and Halim (2017) demonstrated that social media marketing had a positive effect on small business success: "Social media has become the medium that facilitates and expands communication between the SMEs and their customers. Social media is able to create a unique environment which enables businesses to increase their prospective market, reduce marketing cost, increase sales, and offer closer customer relationship management" (p. 189).

Project Planning Knowledge

Researchers studying productivity and the construction industry often compare construction productivity outcomes with the manufacturing industry. Automation and improved project and product management techniques have nearly doubled manufacturing productivity in the last ten years. The construction industry suffers by comparison: Poor performance can be traced back to project planning procedures (Grades, 2009, p. 203). Similarly, Moncrief (2004) identified project management skills as essential for contractors to be successful in keep projects on time, on scope, and to keep costs down.

There are many causes of specialty trade small business failure, both external and internal. External factors, such as a down turn in the economy or rising material costs, can be addressed if a business owner has the educational background and skills to navigate the situation. Internal factors such as poor business management and a lack of planning are often causes of business failure. Business education is a resource that small business owners can use to mitigate these factors. Research indicates

that obtaining education in specific areas of business knowledge such as management, finance, law, marketing, and project planning can have a positive impact on business success.

CHAPTER SUMMARY

The literature available focusing on education for the specialty trade contractor is limited. This chapter examined the definition of small business failure and identified some of the causes of small specialty trade construction firm failure. The literature is further evaluated to determine what areas of education might be most influential in mitigating those failures. General business education along with four other specialty business areas are identified as the focus for course curriculum.

CHAPTER THREE: METHODOLOGY

INTRODUCTION

This project dissertation is designed to support small business specialty trade contractors in their business ventures through continued education. The review of the research and literature in Chapter Two provided critical information regarding the failure of small business and how the specialty trade construction industry is specifically affected. The specialty trade construction has small specific business needs (Clough, Sears, Sears, Segner, & Rounds, 2015, p. 428). A plumber or electrician has the training necessary to work in the construction environment and perform a set of specific tasks. Education in specialty trades construction industry is primarily taught on the job in the form of a registered apprenticeship, or through skilled trades training programs at technical schools or community colleges. These avenues generally do not include a business education: “Courses in construction were developed that focused on the technology and processes of construction without management content” (McDaniel, 2005).

Chapter Three outlines the supporting organizations that contributed to information used to create the curriculum for Certificate of Small Business Management for Specialty Trade Construction and the subsequent reasoning as to why these organizations are significant. A description of Outcomes-Based Learning theory follows the explanation of contributing organizations, along with the rational for that use of curriculum development methodology. An Outcomes-Based Learning methodology supports the use of Backwards Building of the Curriculum, a description of that process is also included. To ensure sustainability of the program, the theory of a Continuous Improvement Model (CIM) is utilized to assess and review at both the course and program level. A description of CIM and the implications of its implementation are discussed following the Outcomes Based Learning information. During the development process, research on the Adult Learning Theory (ALT) was taken into consideration decisions in relation to both the methodology and the mode of delivery. A rationale as to why Adult

Learning Theory is appropriate is also included, followed by a Definition of Terms and a chapter summary.

Program Oversight and Contributing Organizations

The areas of construction and small business management both have organizations designed to support small business creation and management. Some of these organizations are designed to support specific populations; veterans, the unemployed, at risk youth are a few examples. Specific programs like the one developed for this dissertation can be found in Appendix C.

The following three organizations are identified as having vital information necessary to supporting a specialty trade small business owner. The organizations support materials focus on three distinctive areas, construction education, small business education and information, and financial education.

The American Council on Construction Education (ACCE)

The American Council for Construction Education (ACCE, 2014) evaluates and accredits construction education programs offered by U.S. colleges and universities. The curriculum that ACCE requires for accreditation include a minimum of 60 credit hours, and coursework in the following five areas: general education, mathematics and sciences, business and management, construction science, and construction (p. 19). Business and management are components of the ACCE requirements for curriculum for both an associate and bachelor's degrees. The ACCE is the leading accrediting body for construction education in the United States. While the Certificate of Small Business Management for Specialty Trade Construction is technically a degree in small business management, accreditation (or acknowledgement) from ACCE would give the program a higher level of credibility.

The mission of ACCE is to be a leading global advocate of quality construction education; and to promote, support, and accredit quality construction education programs. The purpose or purposes for which the corporation is formed include the following:

- Promote and improve construction education and research at the post-secondary level
- Engage in accrediting construction education programs offered by colleges and universities

- Maintain procedures consistent with policies and procedures established by other accreditation agencies to which the corporation may belong
- Publish current information concerning criteria and procedures adopted by the corporation for accrediting
- Report the results of its activities
- List the colleges and universities which have or are seeking accredited programs of study in construction
- Review at regular intervals the criteria which the corporation has adopted to evaluate programs in construction education
- Do all things necessary to carry out the purposes and conduct the business of the corporation as authorized by law (American Council on Construction Education, 2016).

The United States Small Business Association (SBA)

The United States Small Business Association supports small business enterprises by providing support to small business owners at a local level. The SBA provides some valuable insights through their online coursework; some of that insight was foundational to the coursework designed for this program's coursework. According to the SBA website:

> The U.S. Small Business Administration (SBA) was created in 1953 as an independent agency of the federal government to aid, counsel, assist and protect the interests of small business concerns, to preserve free competitive enterprise and to maintain and strengthen the overall economy of our nation. We recognize that small business is critical to our economic recovery and strength, to building America's future, and to helping the United States compete in today's global marketplace. Although SBA has grown and evolved in the years since it was established in 1953, the bottom line mission remains the same. The SBA helps Americans start, build and grow businesses. Through an extensive network of field offices and partnerships with public and private organizations, SBA delivers its services to people throughout the United States, Puerto Rico, the U. S. Virgin Islands and Guam. (Small Business Administration, 2012, n.p)

The United States Federal Deposit Insurance Corporation (FDIC): Money Smart for Small Business

The goal of the program is to provide individuals with the necessary information to evaluate and make their own financial decisions. The curriculum is used by several community colleges across the country in both college credit and non-credit formats. For example, Albany State University (ASU) delivers Money Smart to first-time small business owners at its Regional Center for Entrepreneurship, Business and Workforce Development. ASU also utilizes Money Smart for Young Adults as a Continuing Education Community Outreach course (FDIC, 2009). In 2013, the United States Federal Deposit Insurance Corporation (FDIC) updated a 2001 business curriculum outline for small business called Money Smart

for Small Business (MSSB) which provides a real-world guide to the financial aspects of owning and operating a small business. This training identifies and has created coursework in the following areas:

- Owning a Business
- Planning for a Healthy Business
- Banking Services
- Organizational Types
- Time Management
- Financial Management
- Record Keeping
- Credit Reporting
- Risk Management
- Insurance
- Tax Planning and Reporting
- Selling Your Business and Succession Planning
- Managing Cash Flow (FDIC, 2018)

OUTCOMES BASED CURRICULUM DESIGN

"Begin with the end in mind" (Covey, 2003, p. 6).

The utilization of the Outcome-Based Education (OBE) theory is the methodology used for the development of both the certificate program and the coursework for this dissertation project. Traditional specialty trade apprenticeship and vocational education models are based on Outcome-Based-Education (Spady, 1994, p. 13), and the utilization of a similar design is intended to create symmetry to the program for students.

Using the OBE methodology means clearly focusing on what is essential for all students to be able to do successfully at the end of their learning experiences (Brandt, 1998). One of the most recognized models of Outcome-Based Education was developed by Bill Spady. Spady lists four principles that he believes should characterize OBE:

- *Clarity of focus* - Creating specific outcomes to create a sense of purpose.
- *Design down, deliver up* -When planning curriculum, educators start with the outcomes and work backwards; when planning instruction, teachers teach what students need to learn to demonstrate the outcomes.
- *High expectations* (OBE departs from traditional education in its assumption that all students can learn well—although not in the same way and not necessarily on the same day), an.
- *Expanded opportunities* (students must be permitted to demonstrate their learning in different ways, and they must have numerous opportunities to demonstrate the outcomes (Spady, 1994).

CONTINUOUS IMPROVEMENT MODEL

McDaniel (2005) emphasizes, "Construction management programs need to provide relevant education that keeps pace with the dynamic construction industry" (p. 14). In recent years, academic institutions and business and industry organizations have utilized some form of the Continuous Improvement Model (CIM). This certificate program will utilize a Continuous Improvement cycle to ensure the coursework remains relevant. To achieve continuous improvement, an institution should take the following steps:

- An advisory committee of instructors, local specialty trade small business owners, alumni, and state and local building inspectors will be created.
- A list of program level objectives, goals, and outcomes will be created/reviewed by the committee.
- Course level student performance outcomes will be developed in alignment with program level outcomes in the form of an outcomes map
- Capstone project objectives will be aligned to program level goals
- Capstone projects will be evaluated by the advisory committee – data on outcomes will be collected. This data provides opportunity to revise the instructional process prior to delivering the course again.
- Revision at the program and course level will be made based on data.

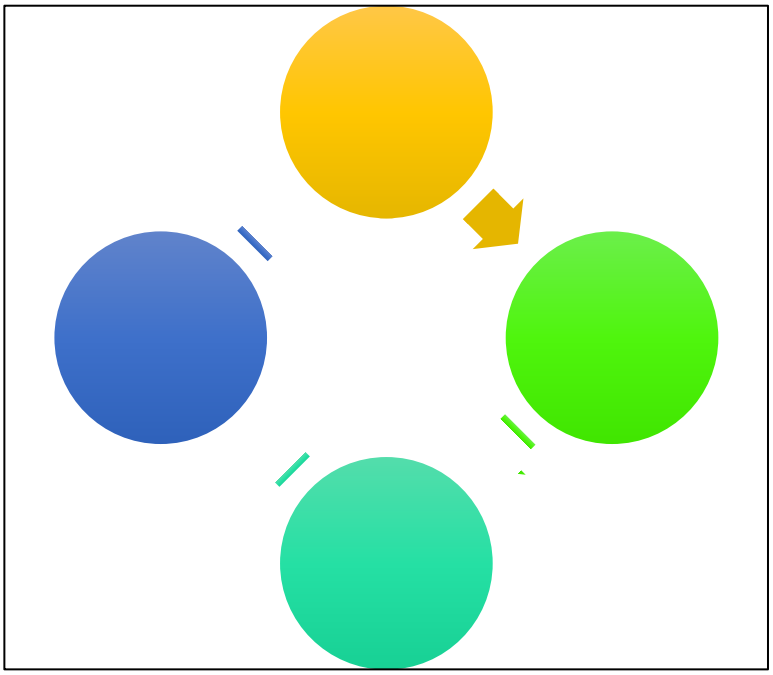


Figure 7: Continuous Improvement Lifecycle

Determining the Curriculum

The research from Chapter Two brings into focus the educational needs of the specialty trades small business owner. As is clear from the literature, several areas of knowledge are crucial to business success. As Harris, Gibson, & McDowell (2014) emphasize that a successful business owner must have the business knowledge to operate the inner workings of the organization (p. 31). The direction for the content for the coursework was derived from that research. In addition, years of experience in the specialty trade industry working with plumbers, pipefitters, sprinkler fitters, ironworkers, cement and plaster masons, etc. has provided the basis for the five courses that make up the Certificate of Small Business Management for the Specialty Trade Construction. Research has identified the following areas of business education that this project will concentrate on to create the Business Education for Specialty Trade Contractor certificate program:

- Basic Business Management
- Financial Literacy
- Marketing and Information Technology

- Licensure and Contract Law
- Project Management

Applying Adult Learning Theory

Recognizing the characteristics of the audience or student group was essential to the development of the curriculum (Carnegie Mellon University, n.d.). Mezirow (1997) stresses that at the center of all learning it is how individuals process experience and reflect on that experience. His theory of adult learning describes a cycle that starts with an experience, learning as a cycle that begins with experience, continues with reflection and then leads to action, which begins the cycle again. The knowledge obtained from a business curriculum could have great impact on the perception of experiences for a small business owner. Mezirow also prescribes self-direction as essential in the transformative learning process (p. 13). Through this process students become life-long learners by learning from their experiences and through interaction with peers.

Backwards Building of Curriculum

When building the curriculum for *the Certificate of Business Management for the Specialty Trade Construction Small Business Owner* program and coursework, the implementation of Backwards Design is used. This is a practical application of putting educational objectives first as the criteria for building curriculum was first introduced by Ralph Tyler in 1949, he suggested that the four questions must be answered when developing curriculum:

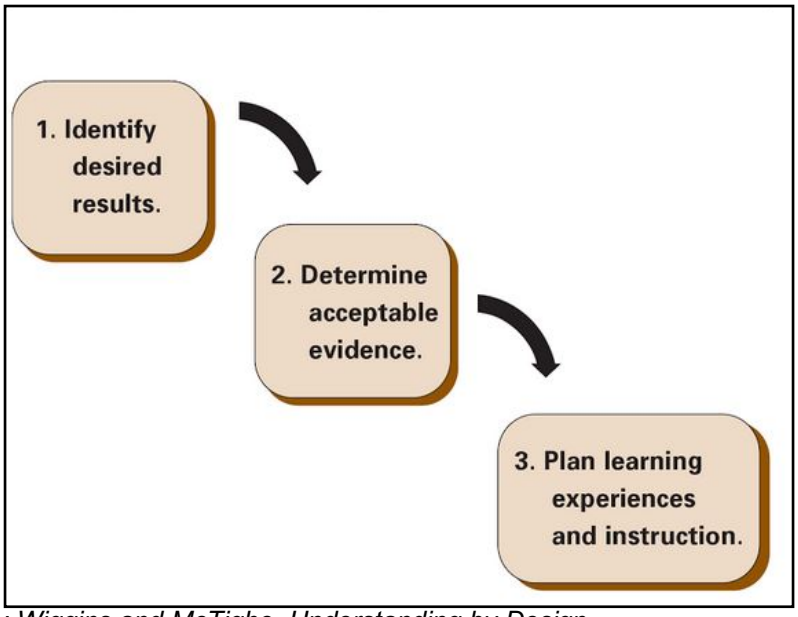
1. What educational purpose should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained? (Tyler R. , 1949)

Wiggins & McTighe (2005) later updated the theory identifying a backward design process in three stages:

1. Identify desired results. First, determine what student to know, the developer should ask “what is the information that is essential?” and “what should the student be able to do after obtaining an understanding of this information?”

2. Determine acceptable evidence. Second, determine how knowledge will be assessed. “This backward approach encourages teachers and curriculum planners to first think like an assessor before designing specific units and lessons, and thus to consider up front how they will determine whether students have attained the desired understanding.

3. Plan learning experiences and instruction. Only after determining what the student should know, and planning how that knowledge will be assessed, should the developer plan the learning experiences, instructional methods, and resource materials for the program or coursework. (p. 17)



Source: Wiggins and McTighe, Understanding by Design

Figure 8: Stages of Backward Design

Mode of Delivery

A 2015 (Provident, et al.) study in the *Journal of Online Learning* provides evidence that transformational learning can take place in an online environment: “The qualitative analysis demonstrated that the multiple steps of the transformative process occurred in the online environment” (p. 141). Online learning was an obvious choice for method of delivery when creating a business curriculum for specialty trade contractors. According to the United States Bureau of Labor Statistics (2017 data), the average age of a specialty trades construction worker was 41.3. When considering learning styles, and therefore mode of education, age is certainly a factor.

Table 3: Specialty Trade Construction Workers, Number by Age and Specialty, 2017*

Selected Occupations (categories with 50K + workers)	Total 16+	16-24	25-34	35-44	45-54	55-64	65+	Median
First-line supervisors of construction trades and extraction workers	639	14	122	178	181	117	27	45.1
Brick masons, block masons, and stone masons	166	15	43	39	48	20	2	41.1
Carpenters	1,351	125	317	361	290	211	47	41.9
Carpet, floor, and tile installers and finishers	183	18	45	51	38	28	3	41.1
Cement masons, concrete finishers, and terrazzo workers	54	9	10	17	10	8	1	41.2
Construction and building inspectors	89	1	8	13	27	26	13	52.5
Construction and extraction occupations	8,031	877	1,914	1,997	1,760	1,220	263	41.3
Construction laborers	1,946	288	480	446	403	256	65	39.4
Drywall installers, ceiling tile installers, and tapers	156	21	36	46	26	23	5	40.3
Electricians	857	90	205	200	195	143	24	41.8
Helpers, construction trades	69	23	18	12	9	7	0	31.1
Insulation workers	58	7	20	14	12	5	0	36.0
Operating engineers and other construction equipment operators	358	26	94	81	75	66	14	41.9
Painters, construction and maintenance	540	60	126	147	109	85	13	41.3
Pipe layers, plumbers, pipefitters, and steamfitters	600	65	147	148	142	87	12	41.1
Roofers	220	31	61	65	44	14	5	37.5
Sheet metal workers	137	9	35	32	30	26	5	42.7
Highway maintenance workers	101	10	17	24	26	21	3	46.0
Mining machine operators	51	2	15	14	12	7	2	41.3
Other extraction workers	54	8	17	11	9	8	2	37.4

** Numbers in Thousands*

Source: Employed persons detailed by age. Bureau of Labor Statistics

For adult students who either are working or already own and operate a small business, student time and convenience is an important priority. An online mode of delivery will allow students who would not be able to meet the constraints of traditional brick and mortar education the flexibility to take the courses. Terry (2007) suggests that flexibility of online scheduling is a key factor in the growth of business education programs. The online mode of instruction gives small business owners the option to attend courses at their convenience. Many online students say their main priority when it came to selecting a

program was convenience: “It is estimated that five of six online students are employed and would not be able to attend traditional classes,” which has made online programs more appealing (Bocchi, Eastman, & Swift, 2010, p. 246).

A key objective in selecting the design is to allow the program: “to provide quality education to all students, regardless of location and time” (Chaney, Chaney, & Eddy, 2010, p. 228). The need for flexible learning environments for potential learners who are working or have other life circumstances that would not permit them to attend (Chaney, 2010). Small business owners often have neither the time nor the inclination to attend traditional courses: “The benefit of flexibility in online courses cannot be overstated due to its prevalence in reasons why students are attracted to online learning. Online learning allows for students to work at a time and a place that is compatible with their learning needs” (Gilbert, 2015, p. 6). To that end, no synchronous learning sessions will be added to the coursework: “Ideally, the needs of the learners should drive the distance learning applications and the technology should be selected to meet the specific requirements of the population of interest. Since many of the potential pool of learners are time-bound due to work, family and community obligations, adding synchronous learning activities (webinars, skype presentations) may preclude their participation” (Chaney, Chaney, & Eddy, 2010, p. 229).

DEFINITION OF TERMS

Many of the terms and acronyms used in the construction industry are not standard. A definition of terms and acronyms has been added to help introduce the reader to field language.

- **Apprentice**: An individual who is employed to learn an occupation and is registered with a sponsor in an approved United States or European apprenticeship program according.
- **Apprenticeship program**: As outlined by the United States Department of Labor, a Registered Apprenticeship Program plan must contain all terms and conditions for the qualification, recruitment, selection, employment and training of apprentices, including such matters as the requirement for a written apprenticeship agreement.
- **Business Education**: This is the intellectual and vocational preparation of people to earn a living in a contemporary industrial and business environment and this also entails the

acquisition of knowledge and the development of skills, competencies, attitudes that are necessary for efficiency of an economy.

- **Capital**: The amount of capital in a business that is equal to the total of capital from debt and equity.
- **Certificate of Completion**: A record of the successful completion of a term of apprenticeship.
- **Craft:** An occupation or trade requiring manual dexterity or artistic skill.
- **Craftsman:** A worker who practices a trade or handicraft: one who creates or performs with skill or dexterity especially in the manual arts jewelry made by European craftsmen.
- **Current Instruction**: (See Related Instruction) The related/supplemental instructional content is and remains reasonably consistent with the latest trade practices, improvements, and technical advances.
- **Department of Labor/ United States Department of Labor**: Organization that federally regulates the training of skilled trade apprenticeships.
- **Employer:** Any person or organization employing an apprentice whether or not such person or organization is a party to an apprenticeship agreement with the apprentice. "Employer" includes both union and open shop employers.
- **IBEW:** International Brotherhood of Electrical Workers, the national labor union that represents electrical workers in the United States.
- **Independent Contractor:** An independent contractor is a person, business, or corporation that provides goods or services to another entity under terms specified in a contract or within a verbal agreement. ... This form is merely a report of the money paid; *independent contractors* do not have income taxes withheld like regular employees.
- **Industry Wide Standards:** The current, acceptable trade practices, including technological advancements that are being used in the different trades.
- **Joint:** Indicates a program that is jointly sponsored by a group of employers and a labor organization with a collective bargaining agreement. It is administered by employer and employee representatives from an apprenticeship and training committee composed equally from management and labor.

- **Joint Apprenticeship Training Committee:** First coined by the International Brotherhood of Electrical Workers, a JATC is the standing committee by which labor organizations set the standards and subjects for their organization's apprenticeship training. The committee is made up of chair people from both labor and management.

- **Journeyperson/Journeyman:** An individual who has sufficient skills and knowledge of a trade, craft, or occupation, either through formal apprenticeship training or through practical on-the-job work experience, to be recognized by a state or federal registration agency and/or an industry as being fully qualified to perform the work of the trade, craft, or occupation. Practical experience must be equal to or greater than the term of apprenticeship.

- **Non-employer:** A non-employer business is one that has no paid employees, has annual business receipts of $1,000 or more ($1 or more in the construction industries), and is subject to federal income taxes.

- **North American Industry Classification System** (NAICS): A Standard Industrial Classification system used by the United States, Canada, and Mexico, to classify businesses and industries and jobs. The NAICS classification system allows for direct comparisons of economic data across borders in North America.

- **One-Person Business**: (variations one-man firm, one-man company, one-person business, and one-person firm, one-person company) A business that is run by one person alone with no staff or partners.

- **Related/Supplemental Instruction:** A term coined by the United States Department of Labor referring to the instruction approved by the program sponsor and taught by an instructor approved by the program sponsor. Instructors must be competent in their trade or occupation. A sponsor must review related/supplemental instruction annually to ensure that it is relevant and current.

- **Relevant Instruction:** Related/supplemental instructional content that is directly required in and applicable to the performance of the apprentice's work. Relevant does not mean academic course content taught by a solely academically qualified instructor except for courses approved by the committee or specified by state law.

- **Self-employed**: An individual who works as the owner of a business and is not employed by a company.

- **Specialty Trades:** Special trade contractors may work on subcontract from the general contractor, performing only part of the work covered by the general contract, or they may work directly for the owner. Special trade contractors for the most part perform their work at the site of construction, although they also may have shops where they perform work incidental to the job site.

- **Sole-Proprietor**: An owner-operated small business with no employees.

- **Trade:** Any apprentice able occupation defined by the apprenticeship, training, employer and labor services section of the United States Department of Labor and these rules.

SUMMARY

The available literature addressing the business education needs of specialty trade small business owners is scarce, but the research does show that small businesses are susceptible to failure and that education, especially business education, can be a beneficial resource. If a small business owner wants to serve their customers and effectively grow their business, they will need a base of knowledge to support their endeavor. The coursework provided in the *Certificate of Business Management for the Specialty Trade Construction Small Business Owner* program is designed to provide the knowledge that these business owners need.

CHAPTER FOUR: PROGRAM CURRICULUM

INTRODUCTION

The Certificate of Small Business Management for Specialty Trade Construction program prepares students for skills needed to successfully own and managers a specialty trade small business. The program focuses on the needs specific to the specialty trades building and construction industry. The Small Business Management for the Specialty Trades program covers the project planning, financial, legal, and general business management operations within a small specialty trades service business. Small Business Management for the Specialty Trades also includes an introduction to different software options that are designed to support small business internal processes. This information is designed to allow the student to use critical thought to design a suitable business process environment. Ultimately, the student will utilize the knowledge gained through this Certificate Program to adapt to the needs of their own organization.

PROGRAM GOALS AND OUTCOMES

The Certificate of Small Business Management for Specialty Trade Construction provides students with the knowledge and skills they need to manage a small specialty-trade construction business. At the completion of this program, students should be able to:

- Identify small business management practices and develop processes and skills that enable successful operation of a specialty trade small business.
- Demonstrate working knowledge of small business financial management and marketing.
- Analyze, select, and implement business software applications to communicate financial and other business information.
- Identify and apply project management principals.

PROGRAM CONTENT

The certificate is comprised of five courses. For ease of discussion, these will be described and discussed by the following course numbers and names:

- Course 1, Basic Business Management for the Specialty Trade Contractor
- Course 2, Financial Management for the Specialty Trade Contractor
- Course 3, Marketing and Information Technology for the Specialty Trade Contractor
- Course 4, Specialty Trade Contracting Law
- Course 5, Project Management for the Specialty Trade Contractor

COURSE 1: BASIC BUSINESS MANAGEMENT FOR THE SPECIALTY TRADE CONTRACTOR

Course Description

This is an introductory course designed to familiarize the learner with the basic business ownership and organization topics. Sections on business planning, accounting and financial management, and types of business ownership are included. This course is designed as an introduction to small specialty trade construction business ownership and will prepare students for the subsequent, in-depth business coursework in the program.

Course Learning Objectives

At the end of this course, students will be able to:

- Use language and terminology associated with business planning
- Identify the components of a business plan
- Identify the benefits proper business management
- Identify financial activities used by small business owners
- Compare and contrast different types of business ownership
- Create a business plan specific to specialty trade small business

Evaluation/Assessment Methods

Evaluation of learning includes participation in discussions and discussion responses, completion of writing assignments that require a clear comprehension of business terminology, completion of all quizzes at 100 percent accuracy, and creating a business plan for specialty trade small business. A final exam will be utilized for evaluation of each course.

Course Resources

- Building a Successful Construction Company by Patricia Atallah (2006)
- Become Your Own Boss in 12 Months: A Month-by-Month Guide to a Business that Works by Melinda F. Emerson and Michael C. Critelli (Mar 18, 2010)
- Are You Ready to Become Your Own Boss? by Melinda F. Emerson (Jan 31, 2011)

Course Assignments

Each module is made up of assignments will consist of assigned reading, writing assignments, an online quiz, and course discussion posting and response. Quizzes can be taken as many times as necessary, will not be graded, but do count towards class participation. Module 5: The Business Plan is the capstone project for this course.

Learning Modules

- Module 1: Management Basics
- Module 2: Management Skills
- Module 3: Business Finance
- Module 4: Business Planning
- Module 5: The Business Plan

Sample Course Plan

Module 1: Management Basics	
Reading:	Business Terminology – Review the list of basic business terms provided in the course pack.
Reading:	Read the case studies provided in the business pack.
Quiz:	Quiz One

Module 1: Management Basics	
Discussion Post:	Evaluate one of the business case studies in assigned reading and, using the terms from the basic business terms, identify situations or problems.
Discussion Post Response:	Respond to one of your classmates posting correctly using the business terminology from the reading.
Writing Assignment Assessment	None

Module 2: Management skills	
Reading:	Basic Management Skills
Reading:	Business failure or success scenarios –From course pack
Quiz:	Quiz Two
Discussion Post:	Describe a scenario in which good management skills positively impacted the outcome of a business situation.
Discussion Post Response:	Respond to a classmate and identify other business skills that may have positively affected the outcome.
Writing Assignment Prompt	Discuss the importance of management skills in small business

Module 3: Finance Basics	
Reading:	Read the overview of small business financial processes provided in the course pack.
Reading:	Read the U.S. Department of Labor Small Business Association Financial Guidelines
Quiz:	Quiz Three
Discussion Post:	Explain the importance of sound small business financial practices.
Discussion Post Response:	Respond to a classmates' explanations, either agree or disagree with their position.
Writing Assignment Prompt	Explain the difference between profit and profitability in regard to small business.

Module 4: Business Planning	
Reading:	Create a log-in at the SBA.gov website. Review the business plan examples.
Reading:	Read the section on creating a business plan.
Quiz:	Quiz Four
Discussion Post:	Discuss the benefits of creating and following a business plan.
Discussion Post Response:	Respond to a classmate's post.
Writing Assignment Prompt	Define the components of a business plan and explain why each is important

Module 5: The Business Plan	
Reading:	Read the SBA “How to Write a Business Plan Article” by Linda Pinson.
Reading:	None
Quiz:	Quiz Five
Discussion Post:	Upon completion of your business plan, post it to the discussion board for peer review.
Discussion Post Response:	Read business plans of two of your classmates. Identify positive and negative aspects of each.
Final Exam	

COURSE 2: FINANCIAL MANAGEMENT FOR THE SPECIALTY TRADE CONTRACTOR

Course Description

This course introduces financial literacy and basic bookkeeping for the specialty trades small business. The purpose of this course is to prepare the specialty trade contractor to manage all financial matters related to their small construction business including balance sheets, income statements, and banking resources. The course also covers tax obligations and reporting.

Course Learning Objectives

Upon completion of the course, students will be able to:

- Identify small business financial practices.
- Apply journal entry accounting to record basic financial transactions.
- Prepare income statements, balance sheets, and statements earnings.
- Describe the benefits of various accounting software programs available for small business.
- Discuss small business tax matters.

Evaluation/Assessment Methods

Evaluation of learning includes participation in discussions and discussion responses, evidence of reading SBA, IRS, and computer software articles through accurate responses to discussion responses and writing prompts, and the completion of course quizzes at 100 percent accuracy. A final exam and the end of the course is used to assess comprehensive knowledge of course materials.

Course Resources

- United States Department of Labor – Small Business Association Financial Education Curriculum: https://www.sba.gov/sites/default/files/files/PARTICIPANT_GUIDE_FINANCIAL_MANAGEMENT.pdf
- Small Business Association – Introduction to Accounting: https://www.sba.gov/tools/sba-learning-center/training/introduction-accounting
- U.S. Financial Literacy and Education Commission: http://www.mymoney.gov
- IRS –Construction Tax Tips: https://www.irs.gov/businesses/small-businesses-self-employed/tax-preparation-hints-construction-tax-tips

Learning Modules

The program consists of online Learning Modules designed to guide the specialty trade contractor through the finance processes he or she will encounter in their role as a business owner.

- Module 1: Financial Business Practices
- Module 2: Financial Record Keeping
- Module 3: Preparing Financial Documents
- Module 4: Software Tools for Small Business
- Module 5: Local, State, and Federal Taxes

Sample Course Plan

Module 1: Financial Business Practices	
Reading:	Read Benefits of Financial Management. From SBA.gov
Reading:	Read Budgeting. From FID
Quiz:	Quiz One
Discussion Post:	Discuss which areas of small business can benefit from accurate financial management.
Discussion Post Response:	Respond to one of your classmates with a rebuttal. .
Writing Assignment	Create a budget based on the outline in course pack. Identify critical areas of cash flow.

Module 2: Financial Record Keeping	
Assignment /Reading	Introduction to Accounting -SBA
	Log into the SBA Learning Center and complete the Introduction to Accounting Lesson
Quiz:	Quiz Two

Module 2: Financial Record Keeping	
Discussion Post:	Define Accounting and Identify Accounting principals
Discussion Post Response:	Respond to a classmate
Writing Assignment Prompt	Describe why accurate accounting is necessary for the success of small business.

Module 3 Bookkeeping	
Assignment	Review- Keeping the Books from the Accounting section of Lynda.com Complete the Balance Statement And Income Statement Assignments
Quiz:	Quiz Three
Discussion Post:	Explain the difference between a balance statement and an income statement.
Discussion Post Response:	Respond to a classmates' explanation, either agree or disagree with their explanation.
Writing Assignment Prompt	Using Excel create an example of a balance statement using the resource sheet.

Module 4: Choosing an Accounting Software	
Reading:	Go to SoftwareAdvice.com and review three accounting software packages specifically for the construction industry.
Assignment	Identify two software packages that would suit your business needs
Quiz:	Quiz Four
Discussion Post:	Identify the software packages you selected and discuss the reasoning for your choice.
Discussion Post Response:	Discuss the pros and cons of different software packages with your class mates.
Assignment	Select a trial version of one of the software packages you identified, download and begin using the package as a practice assignment

Module 5: State, Local, and Federal Tax Issues	
Reading:	Read the Tax Preparation Hints –Construction Tax Tips from the IRS website.
Reading:	Read the Self Employment Tax document from your course pack
Quiz:	Quiz Five
Discussion Post:	Describe some areas of concern for Specialty Trade contractors when filing taxes.
Discussion Post Response:	Respond to classmate's concerns and describe various solutions to tax problems.
Final Exam	

COURSE 3: MARKETING FOR THE SPECIALTY TRADE CONTRACTOR

Course Description

This course provides an introduction to the basic concepts of marketing for a specialty trade contractor, including branding, customer service, customer identification, competition and core strengths, and internet and social media resources.

Course Learning Objectives

At the end of this course, students will be able to:

- Identify the key elements of what marketing is and what it is not
- Identify branding requirements
- Identify the components of customer service management
- Identify internet and social media marketing opportunities
- Create a marketing plan and budget appropriate for a specialty trade small business

Evaluation/Assessment Methods

Evaluation of learning includes participation in discussions and discussion responses, evidence of reading SBA and marketing articles and listening to assigned podcasts through accurate responses to discussion responses and writing prompts, and the completion of course quizzes at 100 percent accuracy. A final exam and the end of the course is used to assess comprehensive knowledge of course materials.

Course Resources

- SBA – Marketing 101- Online supplement
- Duck-Tape Marketing – Apple Podcasts
- How to write a Marketing plan https://smallbusinessbc.ca/article/how-write-a-marketing-plan/
- What is Branding -http://www.thebrandingjournal.com/2015/10/what-is-branding-definition/
- How to Use Social Media – Course Pack Supplement

Learning Modules

- Module 1: Marketing Basics
- Module 2: Branding
- Module 2: Customer Service
- Module 3: The Internet and Social Media Market
- Module 4: Creating a Marketing Budget and Plan

Course Assignments

Each module is made up of assignments will consist of assigned reading, writing assignments, an online quiz, and course discussion posting and response. Quizzes can be taken as many times as necessary, will not be graded, but do count towards class participation. Module 5: The Marketing Budget and Plan is the capstone project for this course.

Sample Course Plan

Module 1: Marketing Basics	
Assignment	Log in to SBA Courses, Marketing 101. Go through all steps to complete the course
Reading	Read the supplemental marketing articles from the course pack
Quiz:	Quiz One
Discussion Post:	Define two methods of marketing strategies and explain how they might benefit your small specialty trade company.
Discussion Post Response:	Respond to one of your classmates evaluating their choice of marketing strategies.

Module 2: Branding	
Reading:	Read *What is Branding from the website*
Reading:	Branding scenarios –From course pack
Quiz:	Quiz Two
Discussion Post:	Identify what makes your business unique and describe the ways in which that unique quality might help you create a brand.
Discussion Post Response:	Respond to a classmate, compare, and contrast branding benefits and downfalls.
Writing Assignment Prompt	Create a one-page outline identifying the ways in which you might create a unique brand.

Module 3: Customer Service	
Reading:	Read the *Identifying Your Perfect Customer* article provided in the course pack.
Reading:	Read Creating a Customer Service Survey from your course pack.
Quiz:	Quiz Three
Discussion Post:	Explain how providing good customer service to existing customers can increase your business
Discussion Post Response:	Respond to a classmates' explanation, either agree or disagree with their position.
Writing Assignment Prompt	Create a customer service survey and provide details as to how you might use the data.

Module 4: The Internet and Social Media	
Reading:	*How to Use Social Media* – Fast company article in course pack.
Reading:	Go to the LinkedIn for Small Business Website and review article
Quiz:	Quiz Four
Discussion Post:	Discuss the benefits of creating social media websites to support your small business.
Discussion Post Response:	Respond to a classmate's post.
Writing Assignment Prompt	Explain the benefits and drawbacks of social media marketing.

Module 5: The Marketing Budget and Plan	
Reading:	*Writing a Marketing Plan*
Reading:	None
Quiz:	Quiz Five
Assignment	Create a two-year marketing plan for your business along with a supplemental budget.
Discussion Post:	Upon completion of your marketing plan, post it to the discussion board for peer review.
Discussion Post Response:	Read marketing plans of two of your classmates. Identify positive and negative aspects of each.
Final Exam	

COURSE 4: LEGAL ISSUES AFFECTING SPECIALTY TRADE CONTRACTORS

Course Description

This is an introductory course designed to familiarize the legal issues pertaining to owning and operation a small specialty trade construction firm. Sections on licensure, building codes, and local permit requirements are included. The course also reviews the components of a business contract, contract law, and insurance obligations specific to build trade contractors. This course is designed as an introduction to the legal issues that may impact a specialty trade small business owner.

Course Learning Objectives

At the end of this course, students will be able to:

- Identify contractor responsibility for proper licensure, permit obligations, and the knowledge of building codes
- Identify the workplace safety laws specific to construction work
- Distinguish the components of a contract
- Identify different types of business and construction contracts
- Describe legal issues that affect building trade subcontractors
- Identify the insurance needs essential to a specialty trade contractor

Evaluation/Assessment Methods

Evaluation of learning includes participation in discussions and discussion responses, completion of writing assignments that require a clear comprehension of business terminology, completion of all quizzes at 100 percent accuracy, and creating a business plan for specialty trade small business.

Course Resources

- LARA: Michigan Department of Licensing and Regulatory Affairs: http://www.michigan.gov/lara
- Stille-Derossett-Hale Single State Construction Code, Michigan Department of Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, Office of Management Services, P.O. Box 30255, Lansing, MI 48909
- Construction Law for Design Professionals, Construction Managers and Contractor, Sweet, Schneler, & Wentz, 2014

- Legal Forms for Starting and Running a Small Business, Steingold, 2016
- US Department of Labor: OSHA Standards for the Construction Industry: https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=Construction

Learning Modules

- Module 1: Licensure and Code Laws
- Module 2: OSHA
- Module 3: Building Contracts
- Module 4: Contract Law
- Module 5: Insurance

Course Assignments

Each module will consist of assigned readings, writing assignments, an online quiz, and course discussion posting and response. Quizzes can be taken as many times as necessary, will not be graded, but do count towards class participation. There is a final exam reviewing the essential knowledge for this course.

Sample Course Plan

Module 1: Licensure and Code Laws	
Reading:	First four chapters of Sweet, Schneler, &Wentz
Reading:	Read the case studies provided in the business pack.
Quiz:	Quiz Two
Discussion Post:	Identify Licensing requirements for your business, what restrictions might the necessary licensing have on business success.
Discussion Post Response:	Respond to one of your classmates posting comparing different requirements.
Writing Assignment	None

Module 2: OSHA and the construction environment	
Reading:	OSHA Standards for Construction
Reading:	OSHA violation case studies from course pack
Quiz:	Quiz Three

Module 2: OSHA and the construction environment	
Discussion Post:	Describe a scenario in there was a contradiction between OSHA standards of safety and a productive working environment. Explain what you did, or might do, to remedy the situation.
Discussion Post Response:	Respond to a classmate and identify other remedies for their scenario.
Writing Assignment Prompt	Discuss the importance of OSHA safety on the jobsite

Module 3: Contracts	
Reading:	Read the chapters 5-10 Sweet, Schneler, &Wentz
Quiz:	Quiz Three
Discussion Post:	Explain the importance of different types of contracts as they apply to your industry.
Discussion Post Response:	Respond to a classmate's explanation, either agree or disagree with their position.
Writing Assignment Prompt	Create a scenario in which both parties might be at fault in violating a contract.

Module 4: Legal Issues	
Reading:	Read chapters 17, 18, 19, 20, and 21 of Sweet, Schneler, & Wentz, 2014
Quiz:	Quiz Four
Discussion Post:	Identify legal issues that might erupt from a poorly executed contract.
Discussion Post Response:	Respond to a classmate's post.
Writing Assignment Prompt	Discuss why subcontractor contracts are often called the Achilles' Heel of building contracts.

Module 5: Identifying Insurance Needs	
Reading:	Read chapters 24, 25, 26 of . Sweet, Schneler,& Wentz, 2014
Quiz:	Quiz Five
Discussion Post:	Identify the types of insurance coverage essential to the risks of specialty trade construction.
Discussion Post Response:	Review classmates' postings and discuss coverage issues
Writing Assignment	Explain the risks associated with specialty trade construction and how they might be mitigated with proper insurance
Final Exam	

COURSE 5: PROJECT MANAGEMENT FOR THE SPECIALTY TRADE CONTRACTOR

Course Description

This introductory project management course is designed to introduce the basic principles of construction project management. This course introduces the importance of delivering project results on time and within budget. The coursework includes different project management software and familiarizes the student with baselines, leveling, Gantt and RACI charts, and calendar entry.

Course Learning Objectives

At the end of this course, students will be able to:

- Use language specific to project management in the construction industry.
- Identify all major project management concepts.
- Create a project management plan that includes cost, scope, and timeline.
- Identify the areas of business that can be enhanced by project management.
- Identify project management software utilized in the construction industry

Evaluation/Assessment Methods

Evaluation of learning includes participation in discussions and discussion responses, completion of writing assignments that require a clear comprehension of business terminology, completion of all quizzes at 100 percent accuracy, and creating a business plan for specialty trade small business.

Course Resources

- Jack Gido and James P. Clements, *Successful Project Management*, 6th ed. (Mason, OH: Thomson/South-Western, 2015). ISBN-13: 978-1285068374
- Harold Kerzner, *Project Management Case Studies*, 4th ed. (Indianapolis: Wiley, 2013). ISBN-13: 978-1118022283

Learning Modules

- Module 1: Project Management Basics
- Module 2: Project Management Theories
- Module 3: Selecting Project Management Software

- Module 4: Creating the Plan
- Module 5: Applying Theory to Practice

Course Assignments

Each module is made up of assignments will consist of assigned reading, writing assignments, an online quiz, and course discussion posting and response. Quizzes can be taken as many times as necessary, will not be graded, but do count towards class participation. Module 5: The Business Plan is the capstone project for this course.

Sample Course Plan

Module 1: Project Management Basics	
Reading:	Project Management Terminology – Review the list of basic project terms provided in the course pack.
Reading:	Read the case studies provided in the Kerzner.
Quiz:	Module One, Quiz One Business Terms
Discussion Post:	Evaluate one of the business case studies in assigned reading and, using the theories from your course pack, describe situations or problems.
Discussion Post Response:	Respond to one of your classmates posting correctly using the business terminology from the reading.
Writing Assignment	None

Module 2: Project Management Theories	
Reading:	Read Chapters 1-4 in Gido
Reading:	Project Management Theories- Read article in coursepack
Quiz:	Module Two Quiz – Project Management Theories
Discussion Post:	Describe different Project Management theories and describe the benefits, shortfalls with each.
Discussion Post Response:	Respond to a classmate and identify other business skills that may have positively affected the outcome.
Writing Assignment Prompt	Discuss the importance of management skills in small business

Module 3: Selecting Project Management Software	
Reading:	Read the chapters 4-7 of Gido.
Reading:	Read article 7 from Course pack
Quiz:	Quiz Three

Module 3: Selecting Project Management Software	
Discussion Post:	Describe three types of Project Management software compare and contrast the cost and capabilities for small business.
Discussion Post Response:	Respond to a classmates' explanation, either agree or disagree with their position.
Writing Assignment Prompt	Create a project plan for a project you have recently completed.

Module 4: Creating the Plan	
Reading:	Read the PMI pre-test guideline from the PMI website and the documents in your course pack.
Reading:	Read Chapters 8-10 from Gido.
Quiz:	Quiz Four
Discussion Post:	Describe a "real life" project you have recently completed and what benefits a project plan may have offered.
Discussion Post Response:	Respond to a classmate's post.
Writing Assignment Prompt	Create a plan with the specifics outlined in Assignment One from your course pack. Create the resources, cost, and timeline

Module 5: Applying Theory to Practice	
Reading:	Read the level two case studies from your course pack
Reading:	None
Quiz:	Quiz Five
Discussion Post:	Describe three popular project management theories and explain how they could be implemented by small business.
Discussion Post Response:	Read discussion posts of two of your classmates. Reply to both.
Final Exam	

SUMMARY

The outline and curriculum included for Certificate of Small Business Management for Specialty Trade Construction program is designed to prepare students with skills needed to successfully own and operate a specialty trade small business. The curriculum provided is suggested and not mandatory. The components included represent the needs of a small construction business but can be adapted by individual organizations.

CHAPTER FIVE: IMPLEMENTATION AND CHALLENGES

INTRODUCTION

"Local group hopes to help fill gap in *shortage* of *skilled* construction..." *(Anderson, 2018)*

"Skilled Tradespeople Can Power Small Business Growth" (Pack, 2018)

The construction industry is volatile and relies heavily on the state of the general economy. This program is not without limitations. This chapter discusses the need for further research, implementation strategies, and a program accreditation and review cycle designed to ensure that the curriculum stays relevant. Finally, a summary of program marketing and alignment with strategic college goals is discussed.

CURRENT NEED FOR SKILLED TRADES AND SMALL BUSINESS EXPANSION

The need for skilled trade workers, those in the specialty construction trades, and owners of small specialty-trade construction firms continues to grow (Jacobson, 2017). During the Great Recession, the construction industry and the specialty trade sector suffered; between 2003 and 2013, the number of one-person firms in the construction industry decreased 10.8 percent and overall employment in the construction industry decreased 26.8 percent. Michigan lost even more jobs, with a 41.4 percent decrease (Scopelliti, 2014, p. 11). While the construction worker shortage looms, the advantages for entrepreneurship in the industry still exist. Opportunities for skilled trade workers to form their own firm continues to be better in construction than in many other industries (U.S. Bureau of Labor Statistics, 2017). However, fewer individuals are choosing that path. According to "The New Map of Economic Growth and Recovery," a report from the Economic Innovation Group, very few new businesses were created in the latest economic recovery compared with previous recoveries (2016). According to Pack (2017), "More small businesses are needed across the country to propel economic

growth, and many of the skilled trades are necessary for communities across the country that need these businesses" (p. 4).

Recommendations for Further Research

A Needs Assessment

This research represents a first attempt to investigate the topic of specialty-trade construction education and further research is required to gain more in-depth insights. Available research was limited. While there is an abundance of research regarding both construction education and business education, research specific to specialty trade contractors in the United States was extremely limited. Research that is available is somewhat outdated but is still relevant. The existing research cited provides information regarding gaps in current academic programs. However, the attitudes of specialty-trade construction workers who have the opportunity to start a small business could be valuable research. A scalable survey of building trade professionals who are not self-employed should be implemented, first on a regional, and if necessary, on a national level. The survey would be to determine a level of interest in the program, and identify specific attitudes, perceptions and concerns. This data would further help to ensure that the content prescribed in the current curriculum aligns with individual's needs.

Implementation

A stackable credential

A necessary component of this program is college acceptance of Department of Labor Registered Apprenticeships as credit for prior learning. A broader acceptance of apprenticeship training for college credit within colleges and universities was driven by an initiative that began with the Obama administration and continues today. President Trump appointed a Task Force on Apprenticeship Expansion in 2017. In April of 2018, the Task Force made the following recommendations:

> Industry-recognized apprenticeships must include work-based learning and performance assessment to ensure that the individual can apply knowledge, skills, and abilities related to the job, as well as obtain the education credentials needed to advance on the job and in his/her career. Certifiers of Industry-Recognized Apprenticeships should help ensure those apprenticeships incorporate the core components of the most successful work-and-learn models, namely:
>
> A. Blended Learning

B. Credit for Prior Knowledge and Experience
C. Industry-Recognized Skill Standards and Credentials
D. Structured Mentorship
E. Paid Work Experience and Advancement Opportunities
F. Portable, Industry-Recognized Credentials, Program Completion Certificates, and/or Degrees with Demonstrable Labor Market Value.

This program is designed to augment an apprenticeship or vocational education pathway with a community college small business management certificate. Given that the certificate is only five courses, the next step would be to meet general education requirements and include additional elective. When coupled with an award of credit for prior learning for an apprenticeship or technical certification program, and the required general education coursework, the certificate could create a career pathway of stackable credentials leading to an associate's degree in Small Business Management for the Specialty Trades.

In 2003, the National Workforce Center for Emerging Technologies developed a skill-set "pyramid" that shows the advancement of occupational programs. This stackable credential scaffolding was created to integrate industry-recognized credentials and certificates into the mainstream educational systems (Cantor, 2018). In 2014, the United States Department of Labor, Office of Apprenticeship proposed a national system of community colleges, employers, and labor union organizations to work together to create opportunities for apprentices and journeymen to utilize the credentials they had earned through a Department of Labor Registered Apprenticeship and apply that time toward a college degree:

> The RACC is administered by the U.S. Departments of Labor and Education. College members agree to provide credit for a Registered Apprenticeship completion certificate as recommended by a recognized third-party evaluator. Currently, there are thousands of existing articulation agreements between a single college and local Registered Apprenticeship program. The consortium will create a national network of colleges and Registered Apprenticeship sponsors allowing apprentice graduates to accelerate completion of their postsecondary degrees at member colleges. (Department of Labor, n.d., n.p.)

Employer and labor union apprenticeship sponsors agree to have Registered Apprenticeship programs evaluated by one of several nationally recognized third-party evaluating organizations, American Council on Education (ACE) and the National College Credit Recommendation Service (NCCRS) are acceptable as Third-Party Evaluators. All RACC college members must be degree-granting institutions that are accredited by a regional institutional accrediting agency recognized by the U.S. Department of Education. In return, colleges must agree to limit the number of residency credits they require for a degree or certificate program to 25 percent or less. In addition, colleges must also agree to accept the

apprenticeship credit for prior learning from other degree granting institutions. This framework sets the groundwork for apprenticeship to become viable alternative to elective coursework for most community college applied science degrees. If implemented, this would allow the specialty trade contractor a direct path to an associate's degree in small business management. At Washtenaw Community College, we provide the following:

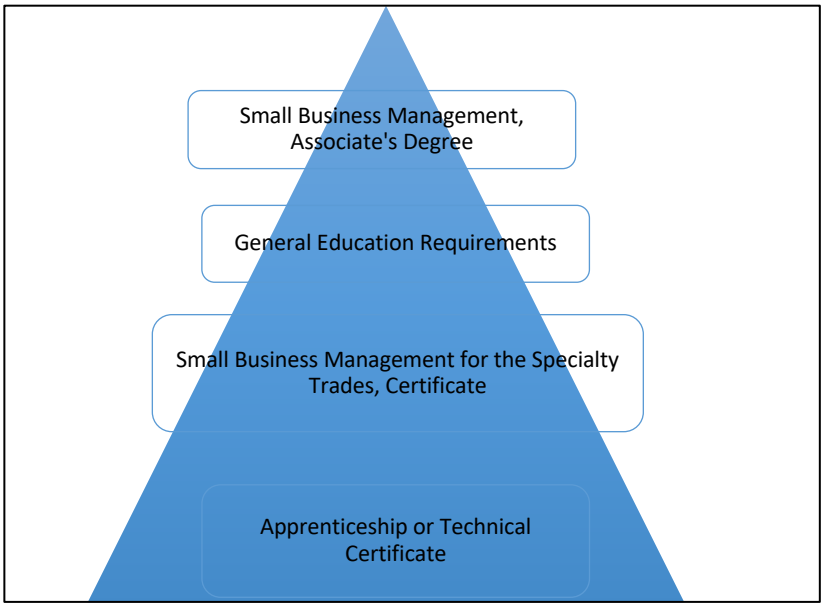


Figure 9: Model for Stackable Credentials

CURRICULAR PROCESSES

Washtenaw Community College has a rigorous curriculum development process. The process is driven by the WCC Board of Trustees Policies (Washtenaw Community College, Board of Trustees, 2002). The steps necessary to develop a new course or a new program include:

Course Approval:

1. New courses are developed when new programs are created, or when a need for a course within a program becomes evident. When faculty wish to create a new course, they discuss their ideas with other faculty in their departments and in the College as a whole.

2. A course proposal is submitted via a workflow software program. The Department Chair, the Dean and the Office of Curriculum and Assessment then review the course proposal.

3. The Curriculum Committee then reviews the new course and/or a new program. Feedback is provided through the Office of Curriculum and Assessment or directly from the Curriculum Committee chair.

4. After review by the Curriculum and Assessment Committees, the information is forwarded to the Vice President for Instruction with a recommendation for approval or a recommendation that the course/program not be approved.

Program Approval:

1. After approval, a proposal for a new program is created.

2. First, an initial idea for a program is presented to the Vice President for Instruction on the Program Proposal form, after approval by the department chair and divisional dean requesting preliminary approval.

3. When the Vice President has approved the initial proposal, the program initiators then revise the Program Proposal form, completing all sections and supplying supporting documentation for the proposal.

4. After review by the Department Chair and the Dean, the proposal is sent to the Curriculum and Assessment committees for review and the Vice President, President and Board of Trustees for final approval (Garrett, 2015).

At Washtenaw Community College, the struggle with the curriculum process and program development occur when an individual or department outside of the traditional academic departments attempts to bring programming forward for workforce purposes. The college is very cautious about suggestions for programming developed out of the normal chain of academic command. Ivy Tech has a created an extensive policy manual regarding building trades' apprenticeships and college academic policy and procedures (See Appendix B).

ACCREDITATION

All programing would be subject to the internal approval process of each community college and be aligned with that college's specific accrediting practices. However, the division and department would affect selection of an accrediting body.

At Washtenaw, both the program and the individual courses would be subject to the oversight of the college's curriculum committee and vice president for academics. For the purpose of credibility, in addition to the college-wide Higher Learning Commission Accreditation, the college should seek the

accreditation of the American Council for Construction Education. An abridged version of the ACCE Standards and Guidelines for Accreditation and Self Study are attached in APPENDIX C.

There are both advantages and drawbacks to third-party accreditation. ACCE notes the following, specific benefits that can be gained by accrediting a certificate program through their organization:

Accreditation of a construction education program by ACCE assures:

a) Students and prospective employers that the program has met stringent industry standards of content and quality

b) That program graduates have been provided a quality education enabling them to perform a broad range of professional responsibilities

c) The construction industry and students that the program performs periodic self-evaluations to keep current with emerging technologies and requirements of the construction industry

Accreditation by ACCE assists an institution and its construction education program in maintaining contact with other programs and practicing construction professionals, and enables the program to

a) Keep current with emerging technologies in the field

b) Increase awareness of current courses, facilities, and services provided by other accredited programs

c) Improve instructional techniques; and

d) Access construction industry contacts nationwide (ACCE, 2018, n.p.)

MARKETING PLAN

A detailed strategic marketing plan should be created, utilizing the data from the Needs Assessment. A marketing plan focusing on attracting specialty trade small business owners to the program would need to be created and implemented in order for this program to be successful. Leveraging the College's relationship with the United Association of Plumbers and Pipefitters would allow the College to utilize existing communication methods: websites, email, social media, and texting. Advertising for the program could be run through those existing media channels.

STRATEGIC GOALS

Washtenaw Community College has made the needs of our local workforce a priority. In the 2012-2016 Strategic Plan, the identified workforce development as an area of focus. The research

provided during the development of the Plan revealed that the College needed to establish clearer relationships with business and industry at the institutional level. This Plan outlined the need for flexibility and quick response to industry needs, customized offerings, and greater collaboration. This program aligns with those goals.

CHAPTER SUMMARY

Assumptions, Limitations, and Suggestions for Further Development

This dissertation project strives to reveal the small business owner educational needs of a sector of the United States construction industry that get little attention in the academic world. Chapters One and Two detail the specifics of the specialty trade construction business, provide a review of the literature available concerning specialty trade small business, business failure and success, and the implications additional education can have toward that success. Chapter Three outlines the methodologies utilized for designing the program, identifying supporting organizations that could contribute to the curriculum development and assessment and accreditation processes. Chapter Four outlines suggested course work for the program. In Chapter Five, the need for further research and an implementation strategy is discussed.

This program was created for specialty trade contractors with no formal input from the potential student group. Assumptions were made through personal communication with specialty trade contractors and anecdotal situations described by them. That communication and information formed original the basis for the need for the program, which was supported through existing research and available data. Further research should be completed in the form of a formal survey and analysis of the resulting data.

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APPENDIX A: TYPES OF SPECIALTY TRADE CONTRACTORS

238 Specialty Trade Contractors					
23811	Poured Concrete Foundation and Structure Contractors	Yes	23571	1771	Concrete Work
23812	Structural Steel and Precast Concrete Contractors	Yes	23591	1791	Structural Steel Erection
23813	Framing Contractors	Yes	23551	1751	Carpentry Work
23814	Masonry Contractors	Yes	23541	1741	Masonry, Stone Setting, and Other Stone Work
			23542	1771	Concrete Work
23815	Glass and Glazing Contractors	Yes	23592	1793	Glass and Glazing Work
				1799	Special Trade Contractors, NEC
23816	Roofing Contractors	Yes	23561	1761	Roofing, Siding, and Sheet Metal Work
23817	Siding Contractors	Yes	23561	1761	Roofing, Siding, and Sheet Metal Work
23819	Other Foundation, Structure, and Building Exterior Contractors	Yes	23591	1791	Structural Steel Erection
			23599	1799	Special Trade Contractors, NEC
23821	Electrical Contractors	Yes	23511	1711	Plumbing, Heating, and Air-Conditioning
			23531	1731	Electrical Work
23822	Plumbing, Heating, and Air-Conditioning Contractors	Yes	23511	1711	Plumbing, Heating, and Air-Conditioning
				7699	Repair Shops and Related Services
			23591	1791	Structural Steel Erection
			23595	1796	Installation or Erection of Building Equipment, NEC
23829	Other Building Equipment Contractors	Yes	23595	1796	Installation or Erection of Building Equipment, NEC
			23599	1799	Special Trade Contractors, NEC
				7622	Radio and Television Repair Shops
23831	Drywall and Insulation Contractors	Yes	23542	1742	Plastering, Drywall, Acoustical, and Insulation Work
				1743	Terrazzo, Tile, Marble, and Mosaic Work (Fresco Work)
23832	Painting and Wall Covering Contractors	Yes	23521	1721	Painting and Paper Hanging
				1799	Special Trade Contractors, NEC
23833	Flooring Contractors	Yes	23552	1752	Floor Laying and Other Floor Work, NEC
23834	Tile and Terrazzo Contractors	Yes	23543	1743	Terrazzo, Tile, Marble, and Mosaic Work (Except Fresco Work)
23835	Finish Carpentry Contractors	Yes	23551	1751	Carpentry Work
				1799	Special Trade Contractors, NEC
23839	Other Building Finishing Contractors	Yes	23561	1761	Roofing, Siding, and Sheet Metal Work
			23599	1761	Roofing, Siding, and Sheet Metal Work
				1799	Special Trade Contractors, NEC
23891	Site Preparation Contractors	Yes	21311	1081	Support Activities for Metal Mining
				1241	Support Activities for Coal Mining
				1389	Oil and Gas Field Services, NEC
				1481	Support Activities for Nonmetallic Minerals (Except Fuels)
			23499	1629	Heavy Construction, NEC
				7353	Construction Equipment Rental and Leasing
			23511	1711	Plumbing, Heating, and Air-Conditioning
			23593	1794	Excavation Work
			23594	1795	Wrecking and Demolition Work
			23599	1799	Special Trade Contractors, NEC
23899	All Other Specialty Trade Contractors	Yes	23499	7353	Construction Equipment Rental and Leasing
			23571	1771	Concrete Work
			23599	1799	Special Trade Contractors, NEC
			56172	1799	Special Trade Contractors, NEC

APPENDIX B: IVY TECH COMMUNITY COLLEGE POLICY ON APPRENTICESHIP

Ivy Tech Community College of Indiana

POLICY TITLE
Apprenticeship

POLICY NUMBER
8.6

PRIMARY RESPONSIBILITY
Academic Affairs

CREATION / REVISION / EFFECTIVE DATES
Created September 1999/Revised December 2011/Effective Spring 2012; revised October 2017/effective immediately

PURPOSE
The College has a number of Apprenticeship programs at the associate degree level. Due to the selective admissions nature and other characteristics of these programs, it is important that their administration be as close as possible to the operations of the other associate degree programs of the College. The following defines how the Apprenticeship programs will be operated, by whom, and what their relationship will be to other programs and services of the College.

ORGANIZATIONAL SCOPE OR AUDIENCE
Corporate College faculty, staff and students

DEFINITIONS
Apprenticeship program: Combines on-the-job training with academic instruction for those entering the workforce

Campus Academic Officer: Person responsible to the institution's chancellor with oversight of all educational affairs and activities, including research and academic personnel

POLICY
Due to the special nature of the apprenticeship curriculums, management of each degree program should be a collaborative effort between the campus' chief academic officer, Dean of the School of Technology, Corporate College Executive Director, and the apprenticeship faculty and staff. However, final responsibility for apprenticeship programs must rest with the campus academic officer of the degree granting institution. Every effort should be made to recognize the primacy of trade skills and technical knowledge in apprenticeship programs as well as the requirement of the College to maintain academic standards in the general education core courses that comprise the associate of applied science degree. In a global sense, apprenticeship management is

partnership in trust and cooperation that brings into focus the value of mastering applied skills, and appropriate academic scholarship.

PROCEDURE

A. Curriculum Management

1. The College recognizes that apprenticeship programs for the building craft trades are based on an established and validated national trade curriculum which requires a minimum number of classroom and on-the-job training hours. These hours in turn convert into a commensurate number of credit hours that, in most cases, exceed the total recommended under curriculum reform guidelines. Total semester hours for apprenticeship degree programs exceeding the 60 to 66 hour limit should be accepted as exceptions.
2. Administration of the apprenticeship curriculum is the responsibility of the campus academic officer.
3. The campus academic officer will review course schedules and submit them for publication and for entry into the Banner system.
4. The apprenticeship enrollment manager or Corporate College (CC) designee will act as the communication link between the campus academic officer and the Joint Apprenticeship Training Committee (JATC). Joint meetings should be held at least once a semester to review and discuss curricular matters. The enrollment manager should maintain ongoing contact with the campus academic officer, student affairs, the Technology School chair, and other functional areas of the College as necessary.
5. Curriculum modifications, course substitutions, test-out verifications, grade changes, transfer credit and other documentation affecting student progress will be submitted to the campus academic officer for approval. The apprenticeship enrollment manager will facilitate movement of forms and other correspondence between the JATC and the College in a timely manner.
6. Apprenticeship students who may wish to transfer to a four-year institution at some time in the future have the option (either during their program or after graduation from the AAS program) to take Ivy Tech general education courses in lieu of apprenticeship mathematics, English, science, and humanities or social studies courses. Such students may also earn credit for such general education courses through test-out procedures or through transfer of previously earned college credits.
7. All Ivy Tech program prefixes in construction trade apprenticeship programs should use trade-specific prefixes in order to avoid any ambiguity that may exist between courses taught specifically in the apprenticeship programs and those taught as part of other technology AAS and AS degrees.
8. Updated copies of curriculum outlines, student progression schedules, and other official course documentation are to reside with the regional academic officer. The apprenticeship enrollment manager or Corporate College designee will facilitate the movement of materials between the JATC and the regional office of instruction.

B. Program Management

Program management activities and documentation should follow or parallel the College's policies and practices as stated throughout ASOM. The apprenticeship enrollment manager or Corporate College designee will play an important role in expediting these policies in cooperation with the campus academic officer and the JATC. Such program management activities include the following:

1. Faculty Loading—All apprenticeship faculty paid by the College will follow faculty loading policy. JATC faculty are paid according to local JATC policies. Their teaching loads for the purpose of the apprenticeship programs are to be determined by the JATC in consultation with the campus Corporate College Executive Director or apprenticeship enrollment manager.
2. Class scheduling will be a shared responsibility between the JATC, Corporate College and the apprenticeship enrollment manager, and will follow the progression needs of the apprenticeship students.
3. Standards of progress verification, grade changes, transfer credit and other documents affecting student progress should be directed to the campus academic office for approval. The apprenticeship enrollment manager will facilitate movement of forms between the JATC and the College in a timely manner.
4. Faculty absence from class: the JATC is responsible for monitoring faculty compliance with the teaching schedule.
5. Advising: JATC faculty serve as advisors for apprenticeship students.
6. Advisory committees: The major responsibility of any JATC is to facilitate trade training through apprenticeship programs and the JATCs upgrade and revise curricular content on a regular basis.
7. Grading of apprenticeship students must follow the College's policies and procedures. Typically, Corporate College Office collects grade rosters from the JATC and forwards them to the Registrar's Office that has responsibility for storage and maintenance. See grading policies.
8. Apprenticeship students who are nearing the completion of degree requirements are to be notified in a timely manner to complete an application for graduation. Apprenticeship students will be verified for graduation per the recommendation of the apprenticeship enrollment manager and the campus academic officer. Program completion will be entered into Banner by the Registrar's Office.
9. Other policies in relation to program management must be followed including:
    a) FERPA
    b) Safety
    c) Non-Discrimination
    d) Degree/Certificate Requirements and Standards for Graduation
    e) Attendance Expectations and Reporting Status
    f) Graduation Ceremony
    g) Credit for Prior Learning
    h) Credit Transfer Awarding/Dual Credit
    i) Veterans
    j) Ratio of Contact to Credit Hours
    k) Student and Faculty Health and Wellness
    l) Repair of Privately Owned Equipment

m) Glenn W. and Mary Catherine Sample Awards
n) Program Accreditation

C. Program Faculty

All faculty employed by the JATC or by Ivy Tech Community College will conform to the College policy on Faculty Credentials. Due to the applied, integrated, and non- transferable nature of apprenticeship mathematics and science courses, their instructional objectives are best met by having JATC journeymen as instructors. All faculty employed by the JATC or by Ivy Tech to teach general education, excluding those non-transferable courses in mathematics and science, will meet credentialing requirements as outlined in current policy.

1. JATC will provide credential information to Ivy Tech on its entire faculty with updates each semester as necessary. Campus Corporate College Executive Directors will be responsible for reporting the JATC credential approval process to the regional academic officer and for providing the approval documentation when requested. The JATC faculty credential information will be kept on file at the regional campus responsible for administering the degree.
2. When substitute faculty are needed due to the unavailability of a regular JATC instructor, the substitute will be hired and contracted by whichever entity, JATC or Ivy Tech, hired and contracted the original faculty member requiring the substitute.

D. Program Effectiveness

Apprenticeship degree programs will participate in assessment and planning activities as appropriate.

1. Apprenticeship degree programs will engage in program review according to the established College cycle in order to identify strengths and weakness and to provide a basis for recommendation to improve program effectiveness. Modification in the process may be necessary due to the special structure and operation of programs. The apprenticeship enrollment Corporate College designee, in cooperation with the JATC, will conduct the review and report results to the chief academic officer.
2. Apprenticeship programs will engage in technical and general education outcomes assessment activities for program graduates. Each apprenticeship program should identify a technical outcomes assessment instrument.
3. All faculty teaching apprenticeship courses should undergo an evaluation of teaching performance every semester. The student evaluation instrument or parallel evaluation instrument or process should be employed. Information gathered from this activity is to be used by faculty and the local JATCs to improve teaching effectiveness.
4. Apprenticeship degree programs should undergo curriculum review according to the College's established review cycle. It is recognized that apprenticeship program faculty on different campuses already communicate with each other and are actively engaged in curriculum improvement. The establishment of a regular review process will bring greater consistency in curriculum and course content

and will aid in identifying valid differences in course content for some technical courses. It is recommended that the apprenticeship enrollment manager Corporate College designee be part of the JATC review of curriculum.

E. Program Admissions and Enrollment

The registration of apprenticeship students must follow the College's policies and procedures. The campuses must administratively handle the admission process in a manner consistent with the intake of degree-seeking students. Individuals enrolled in the College's apprenticeship degree programs will be granted Ivy Tech student status. This status becomes official when fees are satisfied. Because the College subcontracts the majority of apprenticeship program classes, students in the apprenticeship programs are not eligible for federal financial aid, per a decision of the U.S. Department of Education. Students of Ivy Tech will be granted the rights and privileges of student status and will be expected to adhere to the responsibilities that are provided in the College Catalog and Policy and Procedural Manuals. Apprenticeship students must follow the College's admissions process as indicated in the Policy and Procedures manual.

Per 26.SSM Tasks – 3.A, all prospective students pursuing a degree or certificate are required to:

- Submit an application for admission
- Participate in College assessment process or the assessment process determined appropriate by the JATC (Note: apprenticeship students opting to take Ivy Tech general education courses will participate in standard College assessment employing ASSET/COMPASS testing).
- Comply with international student requirements
- Submit other necessary specific data if applicable

REFERENCES

ASOM – www.ivytech.edu/policies

APPENDIX C: STANDARDS AND CRITERIA FOR ACCREDITATION OF POST-SECONDARY CONSTRUCTION EDUCATION DEGREE PROGRAM

The following is an excerpt from the 2014 AMERICAN COUNCIL FOR CONSTRUCTION EDUCATION

DOCUMENT 103

STANDARDS AND CRITERIA FOR ACCREDITATION OF POSTSECONDARY CONSTRUCTION EDUCATION DEGREE PROGRAMS

STANDARD 9: ACADEMIC QUALITY PLANNING PROCESS AND OUTCOME ASSESSMENT

INTENT

Students should be prepared—through educational programs, advising, and other academic and professional opportunities—to pursue a career in construction upon graduation. Students should have demonstrated knowledge and skills in creative problem solving; critical thinking; communications; and the effective management of personnel, materials, equipment, costs, and time to allow them to enter the construction profession. Outcomes assessment is a systematic process of gathering and interpreting information to discover if a program is meeting established objectives and then in using that information to enhance the program.

REQUIREMENTS

While ACCE recognizes the obligation of degree programs to use assessment terminology congruent with their institutions, it is necessary for ACCE Visiting Teams to have a consistent understanding of terminology used in the assessment process. With that purpose in mind, the ACCE will use the definitions in section 1.1.1 as the preferred terminology in assessment documentation. If degree programs cannot use this terminology because of institutional constraints, they shall provide a glossary of compatible terminology at the beginning of Section 9 in the self-study document.

CONTINUOUS IMPROVEMENT

The educational unit shall have a Quality Improvement Plan (QIP) that shall serve as the basis for the continuous improvement of the degree program. The QIP shall have three major components:

A. Strategic Plan for the educational unit
B. Assessment Plan for the degree program
C. Assessment Implementation Plan for the degree program

These documents shall be included in the Self-Study and made available for the Visiting Team's review and discussion.

EDUCATIONAL UNIT STRATEGIC PLAN

A. The educational unit responsible for the degree program shall have a comprehensive Strategic Plan that describes the systematic and sustained effort to enable the degree program to fulfill its mission.
B. This Strategic Plan shall review the internal status of the degree program resources as well as the external factors that influence the operation of the degree program.
C. The Strategic Plan shall be updated periodically and represent the collective input from all of the degree program constituencies.

DEGREE PROGRAM ASSESSMENT PLAN

The degree program shall provide evidence of its effectiveness in preparing construction practitioners based on the results of surveys of the graduates, employers of the graduates, industry advisory board, exit interviews, comprehensive exams, capstone projects, or other systematically structured information.

The mission, goals, and objectives shall reflect both short-range and long-range considerations and shall be clear as to the educational and institutional results expected.

At a minimum, the degree program Assessment Plan shall include the following:

A. Mission Statement of the degree program. The mission statement expresses the underlying purposes and values of the degree program.
B. Degree Program Objectives. The Degree Program Objectives shall be clearly defined and stated in a manner that permits anDRAFT assessment of achievement.
C. Program Learning Outcomes. These Program Learning Outcomes shall meet or exceed the ACCE Student Learning Outcomes (section 3.2.2) and be regularly formulated, evaluated, and reviewed with the appropriate participation of faculty, students, industry advisory board, and other pertinent parties.
D. Assessment tools. These tools shall measure degree program objectives and learning outcomes as stated in B and C above. The frequency for using the tools, and procedures for data collection also shall be stated.
E. Performance criteria. These criteria shall be used to measure the achievement of the degree program objectives and learning outcomes as stated in B and C above.
F. Evaluation methodology. This methodology shall be followed for data collection.

Degree programs shall comprehensively describe their assessment plan and document the results for review by the Visiting Team.

It shall be clearly evident that the degree program is making progress in achieving its mission, objectives, and learning outcomes, and that it takes the outcomes assessment results into consideration in degree program development.

A. Educational units shall conduct a comprehensive assessment at the degree program level.

B. The results of each assessment cycle shall be documented in a systematic manner.

C. Evaluation of the degree program objectives and learning outcomes shall be compared to the stated performance criteria to determine whether stated objectives and learning outcomes were achieved and if there is a validated need for improvement in any areas.

D. After each comprehensive assessment cycle, the entire process shall be reviewed and updated with plans for improvement including any revisions to the degree program's assessment plan.

E. There shall be significant progress in removing any deficiencies identified by the ACCE in previous accreditation actions.

APPENDIX D: CONSTRUCTION CAREER PROGRAMS

The ACE Mentor Program serves high school youth who are exploring careers in Architecture, Construction, or Engineering. The mentors are professionals from leading design and construction firms who volunteer their time and energy. The program is designed to engage, inform, and challenge youth.
www.acementor.org

The American College of the Building Arts (ACBA) is dedicated to educating the next generation of building artisans and to preserving the building arts in a manner never before seen in America. Under the direction of our experienced faculty, students have the opportunity to receive a quality liberal arts education while they learn the skills needed to excel in their chosen field.
www.buildingartscollege.us/

American Council for Construction Education (ACCE) - Since 1974, the American Council for Construction Education (ACCE) has been a leading global advocate of quality construction education that promotes, supports, and accredits quality construction education programs.
www.acce-hq.org

American Institute of Constructors (AIC) - The AIC Constructor Certification Commission knows you are committed to serving the construction industry in a professional and ethical manner. Constructor Certification exams are given every November and April.
American Institute of Constructors (AIC) - www.aicnet.org
Certified Professional Constructor - www.constructorcertification.org

American Road and Transportation Builders Association (ARTBA) has 5 different scholarships available: The Highway Worker Memorial Scholarship Program; the annual Young Executive Development Program; the annual Globe Awards Program; the annual Roadway Work Zone Safety Awareness Awards Program and the annual ARTBA Student Paper Competition.
www.artba.org/foundation/

Arizona State University Online — Construction Management (MS) - Arizona State University's Master of Science in construction management degree is designed to meet the growing need for professionals with advanced technical, management and applied research skills in the construction industry. Offered through the Del E. Webb School of Construction, this online degree program features areas of study in construction management and facility management.
http://asuonline.asu.edu/online-degree-programs/graduate/master-science-construction-management

BuildingSkills Program by Paxton/Patterson - BuildingSkills introduces the construction trades to students as they learn if their interest and aptitudes are well-suited to a construction career. This program gives students the opportunity to transfer what they have learned directly to a summer work program or career.
www.paxtonpatterson.com/construction-education.aspx

Construction Career Days - Youth are vital to the construction industry. Today's high school students represent the pool of workers from which the construction industry will recruit its future workforce. Construction Career Days will expose high school students and adults to rewarding and diverse careers in the industry. The events offer students a career option that they otherwise may not have been aware of. You will need to search online for a CCD near you.

Construction Users Roundtable (CURT) - CURT offers several opportunities for small business training and professional development, both online and in the classroom.
www.curt.org/Training.aspx

The Department of Building Science is a part of the College of Architecture, Design, and Construction at Auburn University, which also includes the School of Architecture and the department of Industrial Design. The mission of the Department of Building Science is to create stimulating learning experiences by engaging in the discovery of

the techniques and management principles of construction.
cadc.auburn.edu/construction

Department of Construction Management at East Carolina University - Provides an educated professional workforce, promote community engagement, and facilitate innovation in construction for the betterment of society. Our goals are to prepare students for success, create future leaders in society, build construction knowledge in service to the profession and public, promote a sustainable environment for the safety and welfare of people, and foster and sustain a collegial environment where learning and sharing of ideas can occur.
www.ecu.edu/cs-cet/construction/index.cfm

ElectricianSchoolEdu.org - This website is the first-of-its-kind resource dedicated solely to providing information on vocational training programs, apprenticeships, state and jurisdiction licensing laws, and career opportunities– all in one place.
www.electricianschooledu.org

Helmets to Hard Hats - A fast way for Military, Reservists, & Guardsmen to transition from active duty to a career in the construction industry.
www.helmetstohardhats.org/

Lorman Continuing Education - NAWIC partners with Lorman Education Services to provide cost-effective training opportunities that meet the needs, enhance the skills, restore knowledge, and build educational competencies.
Lorman Educational Services for NAWIC Members

M.A.G.I.C. Camp - Mentoring a Girl in Construction - A free, one-week day camp designed to introduce high school girls to exciting careers in construction.
www.mentoringagirlinconstruction.com/

National Center for Construction Education & Research (NCCER) - NCCER offers curricula in over 70 different craft areas and more than 80 different assessments. When you successfully complete training, assessments and/or performance verifications through an NCCER Accredited Training Sponsor or Assessment Center, NCCER's Registry System records your completions and issues the appropriate credentials. It is these portable, industry-recognized credentials that many industry leaders look for when making employment decisions.
www.nccer.org/training-and-certifications

Small Business Administration Online Courses - Since its founding on July 30, 1953, the U.S. Small Business Administration has delivered millions of loans, loan guarantees, contracts, counseling sessions and other forms of assistance to small businesses.
www.sba.gov/tools/sba-learning-center/search/training

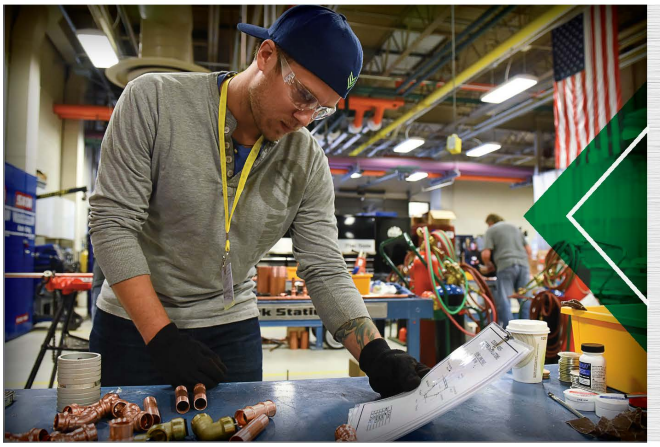
APPENDIX E: UA UNIVERSITY, WCC ASSOCIATE'S DEGREE PROGRAMS FOR UA MEMBERS

SAVE MONEY WITH CREDIT FOR APPRENTICESHIP

The cost of tuition and fees varies significantly between colleges and universities. Generally, a public community (two-year) college, such as WCC, will cost much less than a four-year college or university. For the 2018–2019 academic year, WCC's tuition rate (including fees) for online classes is $129 per credit hour for out-of-state students.

When estimating the cost of your associate degree at WCC, consider the value of the college credits that we grant you for your UA Apprenticeship or UA STAR Exam.

**Earned at WCC or may be transferred from previous college.*



"You'll never get a better chance to finish your associate degree program—guaranteed! I've never worked with a better staff than Washtenaw's mentors and educators. They made obtaining my college degree easier than I ever thought possible—you'd be crazy to pass up an opportunity like this."

- WCC UA Student, Peekskill, N.Y.

APPRENTICESHIP AND UA STAR EXAM VERIFICATION

UA members who achieved journey status after August 2000 and current UA apprentices can receive 45 college credits from WCC for completing their apprenticeship experience. Interested apprentices should see their Local Union Training Coordinator to be registered for these college credits.

UA members who achieved journey status prior to August 2000 will need to pass the UA STAR exam to receive the 45 credits for their apprenticeship experience. Please contact your UA Local Union Training Coordinator to schedule an exam date and obtain study materials.

YOU'RE ONLY 5 CLASSES AWAY FROM A DEGREE

JOURNEYMAN INDUSTRIAL— ASSOCIATE IN APPLIED SCIENCE

INVEST IN YOUR FUTURE

Five classes and your apprenticeship completion—that's all it takes to earn your Journeyman Industrial (JPIM) degree with Washtenaw Community College.

This degree program is for UA members who want to pursue college credit in areas that augment or complement current trade related expertise.

UA Apprenticeship or UA STAR Exam » Submit verification ***wccnet.edu/apprenticeshipcredits***	**45 Credits**

	General Education Courses	
☑	Math *satisfied by completion of UA Apprenticeship*	3–4 Credits
☑	Natural Sciences *satisfied by completion of UA Apprenticeship*	3–4 Credits
☐	Arts and Humanities	3 Credits
☐	Writing/Composition	3 Credits
☐	Writing/Composition 2 or Communication	3 Credits
☐	Social and Behavioral Science	3–4 Credits
☐	Computer Elective	3–4 Credits
☐	**Minimum 60 Credits Required**	

You need 60 minimum credits to earn an associate degree at WCC. 15 minimum credits must be taken at WCC to meet residency requirement.

INDUSTRIAL TRAINING—APPLIED SCIENCE

Open only to select UA Instructors participating in the Instructor Training Program held every August at Washtenaw Community College's main campus. The Industrial Training degree program offers professional and technical courses related to trade teaching in the United Association.

UA Apprenticeship or UA STAR Exam » Submit verification ***wccnet.edu/apprenticeshipcredits***	**45 Credits**
Successful completion of Instructor Training Program at WCC	**15 Credits**

General Education Requirements			
☑	Math *satisfied by completion of UA Apprenticeship*	1 course	3–4 Credits
☑	Natural Sciences *satisfied by completion of UA Apprenticeship*	1 course	3–4 Credits
☑	Communication *may be satisfied by completion of UAT 210* ***and*** *UAT 213 via UA instructor training*	1 course	3 Credits
☐	Arts and Humanities	1 course	3 Credits
☐	Social and Behavioral Science	1 course	3–4 Credits
☐	Writing/Composition	1 course	3–4 Credits
General Education Courses			**18–22 credits**
Minimum 60 Credits Required			

CONSTRUCTION SUPERVISION—ASSOCIATE IN APPLIED SCIENCE

This program is designed for UA members who are interested in moving into a construction management position. The Construction Supervision degree program concentrates on supervision and project management skills, including human resources management, contracts and other legal issues.

UA Apprenticeship or UA STAR Exam » Submit verification ***wccnet.edu/apprenticeshipcredits***	**45 Credits**

☐	UAS 111: Motivating Employees	3 credits
☐	UAS 122: Supervisory Skills	3 credits
☐	UAS 210: Legal and Personnel Aspects	3 credits
☐	UAS 222: The Construction Project	3 credits
☐	UAS 230: Scheduling and Project Management	3 credits
Major/Program Coursework		**15 Credits**

General Education Requirements 2018–2019			
☑	Math *satisfied by completion of UA Apprenticeship*	1 course	3–4 Credits
☑	Natural Sciences *satisfied by completion of UA Apprenticeship*	1 course	3–4 Credits
☐	Arts and Humanities	1 course	3 Credits
☐	Writing/Composition	1 course	3 Credits
☐	Social and Behavioral Science	1 course	3–4 Credits
☐	Writing/Composition 2 or Communication	1 course	3–4 Credits
General Education Courses			**21–25 credits**

Minimum 60 Credits Required

FINISH YOUR DEGREE WITH ONLINE CLASSES

We offer online General Education classes that you need to complete your degree program.

UA APPRENTICESHIP + MAJOR / PROGRAM (15 CREDITS) + GENERAL EDUCATION* = ASSOCIATE DEGREE

Earned at WCC or may be transferred from previous college.

GENERAL EDUCATION REQUIREMENTS 2018–2019		
	Associate in Science (AS)	Associate in Applied Science (AAS)
Writing/Composition	3–4 credits	3–4 credits
Second Writing/Composition or Communication	3 credits	3 credits
Mathematics	3–4 credits	3–4 credits*
Natural Sciences[1]	7–8 credits	3–4 credits*
Social and Behavioral Science	6 credits	3 credits
Arts and Humanities	6 credits	3 credits
General Education Electives	0–2 credits	N/A
Minimum	30 Credits	18 Credits

*Satisfied by UA apprenticeship (AAS only)
[1]Two courses in Natural Science including one with laboratory experience (from two disciplines)

Visit the online classes website at: *wccnet.edu/online* for a complete list of classes being offered.

"What I enjoyed most in regards to attending WCC's online classes is being able to access the virtual classroom at one's convenience. As a new student, I feel WCC's online classes give clear direction for assignments found in the modules. After successfully completing the Introduction to Online Learning class, I am confident that I can achieve my education goals."

– WCC UA Student, UA Local 68, Houston, Texas