

Community College Administrator Program with Ukraine
Academic Symposium

Community College Leadership: Crafting a Framework and Securing Funding

Dr. George Bishop, Learning Systems Institute, FSU
(former Vice President for Academic Affairs, Gulf Coast State College)

This session will address several key issues in community college leadership, including the establishment of goals for community colleges, assessment of goals, and aligning budget development with the college's mission and assessment.

Several interruptions (as of September 2018):

- System focus vs. local focus (the realities)
- Government relations vs management ability
- Performance funding realities (\$ source, PSC)
- Tuition freeze (5 years, 80%+ personnel, cuts)
- Costing of programs
- Focus on “customer service” / the college as library?
- Blurred lines (DE, CC’s etc.)

Key issues in community college leadership and budgeting

- 1. Establishment of goals for community colleges*
- 2. Assessment of goals*
- 3. Aligning budget development*

These critical elements must be driven by the mission and vision of individual community colleges and the overall community college system



The Florida College System Mission

- The Florida College System is the primary access point to undergraduate education for Floridians, including recent high school graduates and returning adult students. The **28 member colleges of the Florida College System** respond quickly and efficiently to meet the demand of employers by aligning certificate and degree programs with regional workforce needs. With an array of programs and services, our colleges serve individuals, communities and the state with low-cost, high-quality education opportunities.

FCS Mission

- The mission of the Florida College System is to *provide access to high-quality, affordable academic and career educational programs that maximize student learning and success, **develop a globally competitive workforce** and respond rapidly to diverse state and community needs.*



STATE
UNIVERSITY
SYSTEM
of FLORIDA
Board of Governors

The mission of the **State University System** of Florida is to provide undergraduate, graduate and professional education, research, and public service of the highest quality through a coordinated system of institutions of higher learning, **each with its own mission** and collectively dedicated to serving the needs of a diverse state and global society.

Florida College System “Service areas”



Florida Workforce Regions (driving data collection)



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Gulf Coast State College: Mission & Vision

Gulf Coast State College will deliver life-changing learning opportunities and will join as a full **partner in dynamic cultural and economic development** of the region. Gulf Coast State College holds students and community of central importance. The College provides many opportunities for learning and offers a range of programs and services to help students become well-educated, productive citizens. The College is equally dedicated to **collaborating with the community** to help **create or improve economic well-being** and to offer the space of the College for social dialog, events of art and culture and other moments that enhance our quality of life.

Tallahassee Community College: Mission & Vision

Since 1966, Tallahassee Community College has offered high-quality post-secondary education for the citizens of Leon, Gadsden and Wakulla counties, along with students from throughout the state, nation and abroad. Our mission is to provide a learning environment that prepares students for success in a **global economy** by offering higher education pathways, **workforce opportunities and civic engagement** experiences. Our vision is to be recognized as your college of choice.

Establishing and Assessing Goals

(based on your mission)

Creating a Roadmap of Where You Want to Go and How to Get There

- **Strategies** – A strategy is a unique approach of how you will use your mission to achieve your vision. Strategies are critical to the success of an organization when aligned with an action plan.
- **Goals** – A goal is a more specific statement of what you want to achieve. A goal is a milestone(s) in the process of implementing a strategy.
- **Assessing Goals** – Enables Measurement and Accountability. Assessment is critical to the success of the system
- **Aligning the Budget to Goals** – Enables Program & Institutional Impact

BEST PRACTICES IN COMMUNITY COLLEGE BUDGETING

PRIORITIZE SPENDING TO ENACT THE STRATEGIES & ALLOCATE RESOURCES

Key Points:

- Because the budget document is one of the most important policy documents for a college, it needs to consider how the document is organized, what information is included, and how the document is presented.
- Fundamentally, ***the budget should tell the story of the challenges the college is facing and how those challenges will be addressed*** through the college's strategies and financial plan.
- The budget should address college-wide strategies and spending, including all funds and resources. It also should provide insight into the strategies and spending plans of the college's subunits.

Budget Planning

- Crafting a Budget Framework
- Stories from the Field
 - The Role of Institutional Research
 - Responding to the winds of federal legislative funding
 - Zero-based budget vs Rollover budget planning
 - The balancing act among competing interests at the college
 - The joy of grants
 - Non-traditional sources of revenue

Remember:

- 1. Establish measurable goals for the community colleges as a system*
- 2. Establish measurable goals for EACH community college, adjusted to specific concerns of their service population and or geographic and economic areas*
- 3. Goals established must be subject to ongoing assessment*
- 4. The budget framework must ensure alignment with the mission and the goals*

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Academic Programs: Aligning Program Development and the Economy

Dr. George Bishop, Learning Systems Institute, FSU
(former Vice President for Academic Affairs, Gulf Coast State College)

The establishment and development of academic programs in the community college should take account of the workforce needs of the local economy. This session will address the role of community college leaders in ensuring that academic programs are aligned with local economic needs and are periodically assessed to ensure that they continue to meet local needs.

Culture vs Strategy



- ▶ **People are loyal to culture, not strategy**
What can you do to enhance loyalty?
- ▶ **Culture creates** competitive differentiation.
What is the cultural brand of your college?
- ▶ A **brittle culture can doom** even a great college (or organization).
- ▶ When Culture and Strategy collide, **culture wins.**
- ▶ **Strategies can be copied, but not culture.**
Culture is complex...

Adapted from 12 Reasons Culture Eats Strategy for Lunch

by [Joe Tye](#), CEO and Head Coach at Values Coach Inc. on Sep 07, 2013

Developing a Workforce Strategy

Workforce planning ensures you have the right people in the right jobs at the right time and for the right cost.

Strategic workforce planning helps you understand:

- current workforce environments
- necessary skills, capabilities and aptitudes that will be required
- workforce strategies, systems and practices to fill any skills gaps
- linkages with whole-of-government priorities and outcomes.

Mature your Workforce Data

Enable data sources to track your workforce trends and needs and use this data to create and adapt your workforce programs.

DATA-DRIVEN

- Environmental scan to understand external and internal workforce impacts
- Source information on external labor market conditions; in particular critical skills and/or key occupational groups
- Review current skill or capabilities and performance profiles
- Define career paths and succession plans of current and potential future workforce
- Implement workforce planning dashboard incorporating measures to monitor performance against key result areas

Align Workforce Framework with Pillars

Develop a whole-of-government workforce planning framework to assist departments to develop their strategic workforce plans.

ALIGNMENT

Identify drivers affecting workforce design and deployment including political, economic and societal factors

- Confirm high level business process, service delivery or technology changes for the workforce
- Desired attributes, skills, capabilities and performance expectations of future workforce and likely labor market conditions

Florida's 6 Pillars for 2030

Talent Supply & Education

- Early Learning
- K-12
- Higher Education
- Workforce

Innovation & Economic Development

- Florida's Economic Portfolio
- Innovation Economy
- Entrepreneurism
- Capital & Investments
- Global Trade

Business Climate & Competitiveness

- Commercial Insurance
- Taxes
- Regulation
- Permitting
- Property Rights
- Legal Reform
- Workplace & Employment

Infrastructure & Growth Leadership

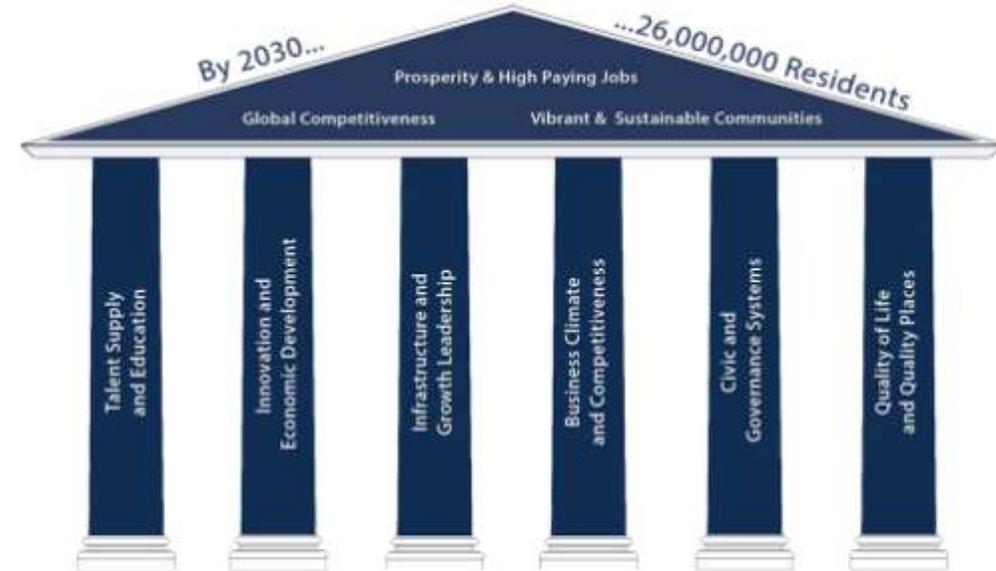
- Planning & Development
- Transportation & Logistics
- Water
- Energy
- Communications
- Waste Management
- Environmental Issues
- Risk Preparedness & Mitigation

Civic & Governance Systems

- Florida's Budget
- Governmental Systems
- Federal Issues
- Ethics & Elections
- Local Government Issues
- Regional Stewardship
- Civic Infrastructure
- Public Private Partnerships
- Florida's Constitution

Quality of Life & Quality Places

- Health & Wellness
- Safety & Security
- Housing & Livability
- Families & Children Retirement & Lifelong Engagement
- Economic Opportunity & Prosperity
- Sense of Place & Community





Florida's 6 pillars of Economic Growth

Six Pillars Community is organized around the six pillars framework that has made the Florida Chamber Foundation a success: Talent and Education, Innovation and Growth Management, Infrastructure and Growth Leadership, Business Climate and Competitiveness, Civic and Governance Systems, and Quality of life and Quality Places.

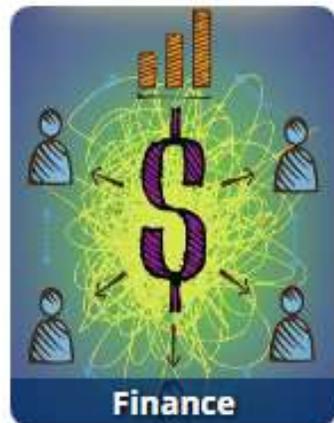
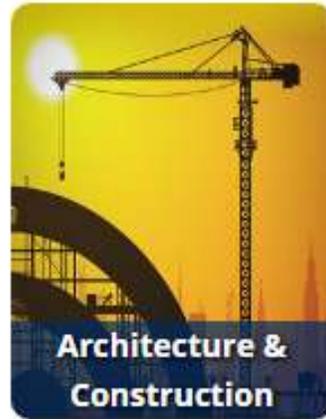


Resources for Academic Program Planning

- Regional Occupation Cluster Analysis
- Business and Industry Partnership Engagement
 - (Required Applied Science Degree Area Advisory Meetings)
- Statewide Curriculum Frameworks
- Workforce Partnerships (Local Workforce Boards, Economic Development Alliances, Chambers of Commerce, Clubs/Organizations)
- Federal Funding Sources (Department of Labor Grants, Perkins, etc.)
- Federal Bureau of Labor Statistics
- Florida Department of Economic Opportunity
- Proprietary database mining

Selecting Academic Programs by Workforce Clusters

- National
- Regional
- State
- Local



U.S. Cluster Mapping Project

- A cluster is a regional concentration of related industries in a particular location. Clusters are a striking feature of economies, making regions uniquely competitive for jobs and private investment. They consist of companies, suppliers, and service providers, as well as government agencies and other institutions that provide specialized training and education, information, research, and technical support.
- The U.S. Cluster Mapping Project is a national economic development initiative led by Harvard Business School Professor Michael Porter through the Institute for Strategy and Competitiveness, with support from partners around the country and a federal grant from the U.S. Department of Commerce, Economic Development Administration.

Cluster: a regional concentration of related industries ⓘ



<http://clustermapping.us/>

The National Career Clusters[®] Framework

- 16 Career Clusters in the National Career Clusters Framework, representing more than 79 Career Pathways to help students navigate their way to greater success in college and career

- [Agriculture, Food & Natural Resources](#)
- [Architecture & Construction](#)
- [Arts, A/V Technology & Communications](#)
- [Business Management & Administration](#)
- [Education & Training](#)
- [Finance](#)
- [Government & Public Administration](#)
- [Health Science](#)

- [Hospitality & Tourism](#)
- [Human Services](#)
- [Information Technology](#)
- [Law, Public Safety, Corrections & Security](#)
- [Manufacturing](#)
- [Marketing](#)
- [Science, Technology, Engineering & Mathematics](#)
- [Transportation, Distribution & Logistics](#)

The National Career Clusters[®] Framework

Organizing tool for curriculum design and instruction, Career Clusters provide the essential [knowledge and skills](#) for the 16 Career Clusters and their Career Pathways.

It also functions as:

- a useful guide in developing programs of study
- bridging secondary and postsecondary curriculum
- and for creating individual student plans of study for a complete range of career options.

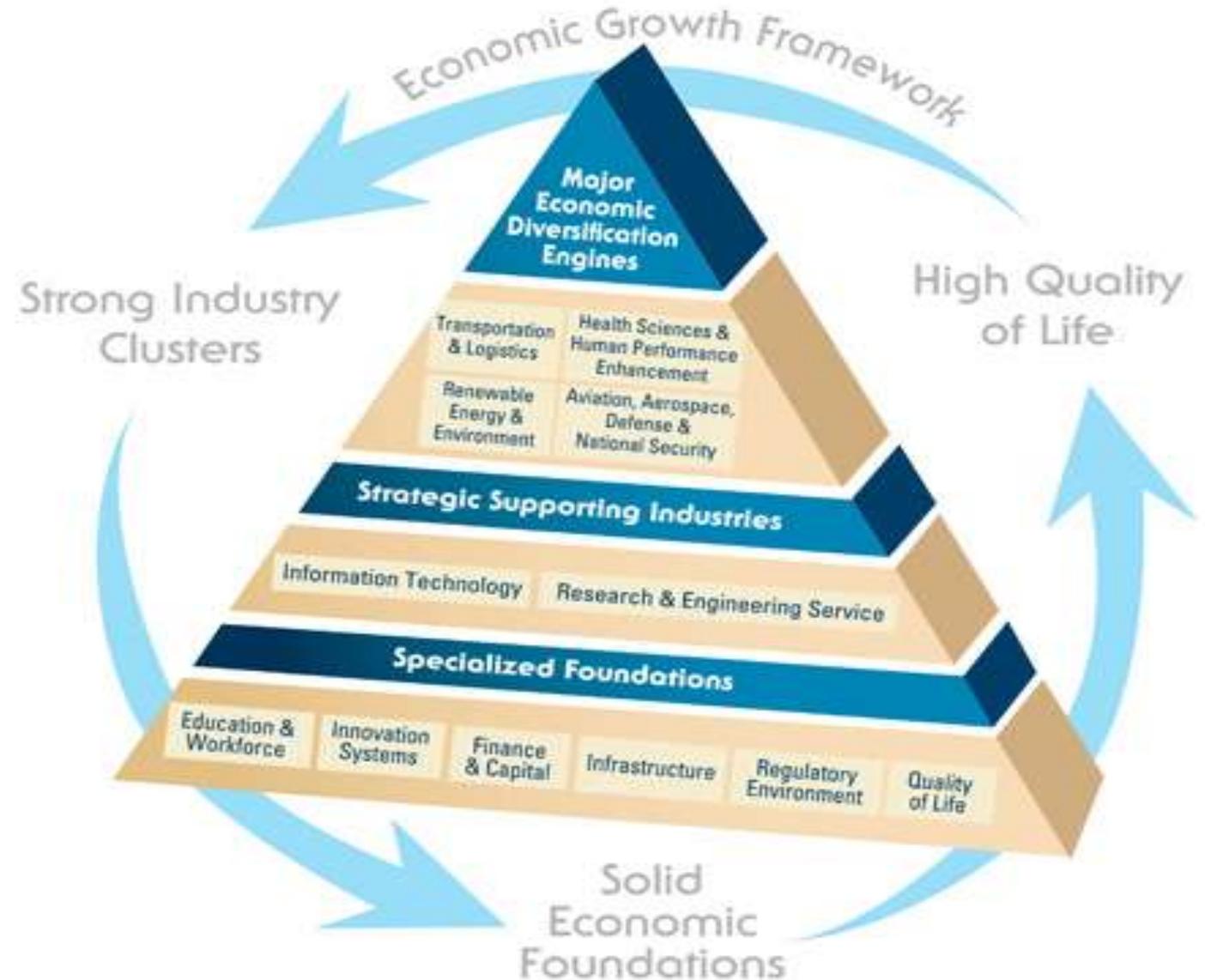
As such, it helps students discover their interests and their passions, and empowers them to choose the educational pathway that can lead to success in high school, college and career.

REGIONAL CLUSTERS

Florida's Great Northwest

Key industries for developing a diversified and sustainable economy

- Information & Technology Services
- Research & Engineering
- Energy & Environment
- Transportation & Logistics
- Aerospace & Defense
- Health Sciences



Employment Projections

Home > Labor Market Information > Data Center > Statistical Programs > Employment Projections

Labor Market Information Data Releases

About Labor Market Information

Data Center

Statistical Programs

New User Guide to Labor Market Information (LMI)

Quarterly Census of Employment and Wages

Current Employment Statistics

Local Area Unemployment Statistics

Mass Layoff Statistics

Occupational Employment Statistics and Wages

Employment Projections

Florida Census Data Center

Florida Census Data

U.S. Census & Demographic Data

Employment Projections are forecasts of future employment levels for industries and occupations in Florida. The Long-term Employment Projections program provides estimates of current and projected employment by industry and occupation for eight years into the future. The projections also include rankings of the fast-growing industries and occupations in Florida. These data are produced for the state, Workforce Regions, and counties with employment greater than 100,000.

Geographic Coverage: Statewide, Workforce Regions, and large counties
Frequency: Annually

Employment Projections Data

2016-2024 Projections Statewide or by Workforce Region
Workforce Region 5 - Gadsden, Leon & Wakulla counties

2016-2024 Projections for Largest & Single Counties

Select an Option

All Areas Projections Table

To facilitate research and comparisons, Labor Market Statistics (LMS) new table designed for the application of filters. The All Areas Pts table contains all published areas, along with average annual opening due to replacement needs. Researchers and labor market analysts to select, for example, a single occupation across all published areas in an area that require a masters degree, and the highest paying in a workforce region that require Post Secondary Adult Vocational training. This table are many, and LMS can answer questions about its use. Projection Table [X]

Resources (Dictionary / Crosswalks / Coding Structures)

Projections Information

Latest employment projections (2016-2024) released.

Employment Projections Data

2016-2024 Projections Statewide or by Workforce Region

Workforce Region 5 - Gadsden, Leon & Wakulla counties

Select an Option

Statewide

Workforce Region 1 - Escambia & Santa Rosa counties

Workforce Region 2 - Okaloosa & Walton counties

Workforce Region 3 - Calhoun, Holmes, Jackson, Liberty & Washington counties

Workforce Region 4 - Bay, Franklin & Gulf counties

Workforce Region 5 - Gadsden, Leon & Wakulla counties

Workforce Region 6 - Hamilton, Jefferson, Lafayette, Madison, Suwannee & Taylor counties

Workforce Region 7 - Columbia, Dixie, Gilchrist & Union counties

Workforce Region 8 - Baker, Clay, Duval, Nassau, Putnam & St. Johns counties

Workforce Region 9 - Alachua & Bradford counties

Workforce Region 10 - Citrus, Levy & Marion counties

Workforce Region 11 - Flagler & Volusia counties

Workforce Region 12 - Lake, Orange, Osceola, Seminole & Sumter counties

Workforce Region 13 - Brevard County

Workforce Region 14 - Pinellas County

Workforce Region 15 - Hillsborough County

Workforce Region 16 - Hernando & Pasco counties

Workforce Region 17 - Polk County

Workforce Region 18 - Manatee & Sarasota counties

Resources (Dictionary / Crosswalks / Coding Structures)

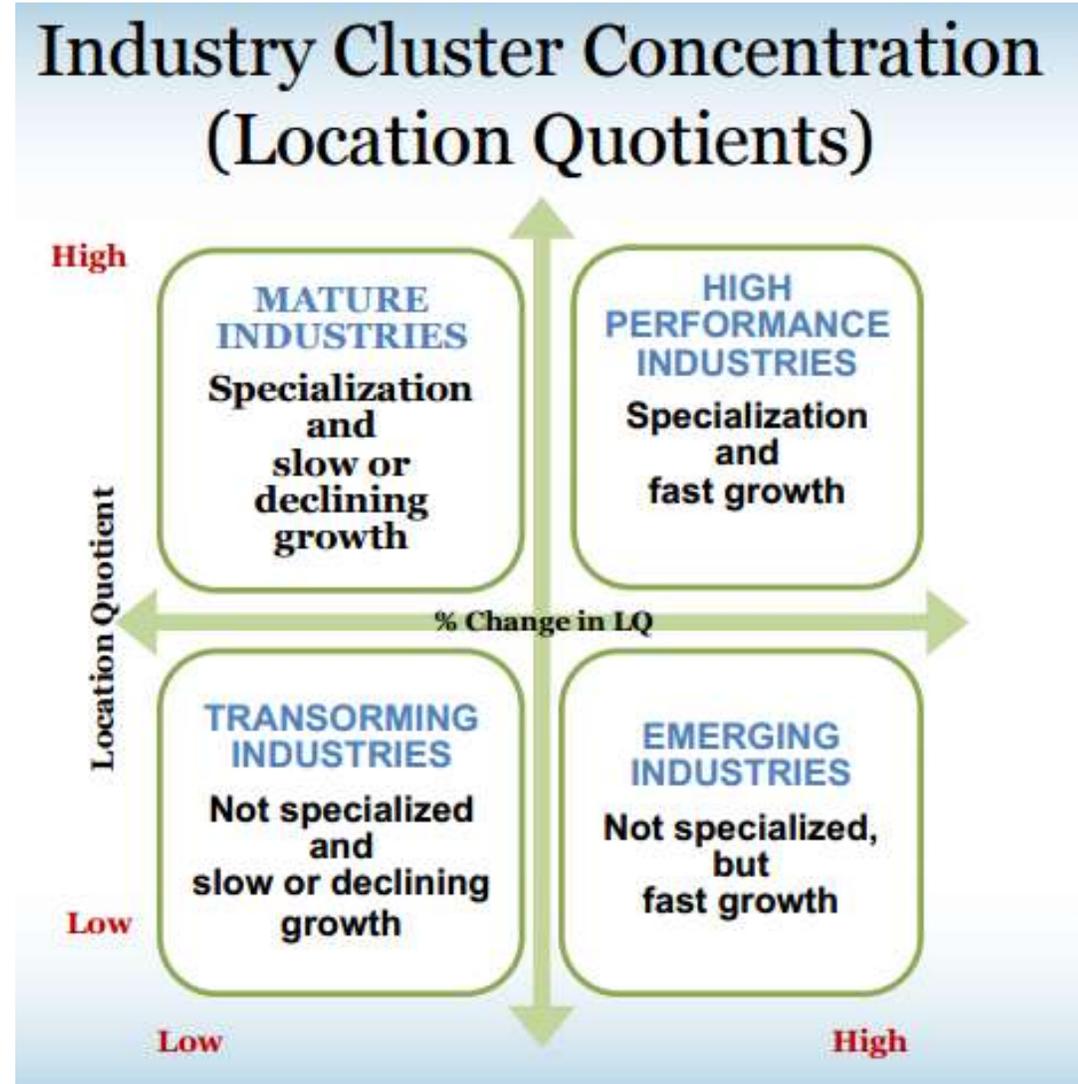
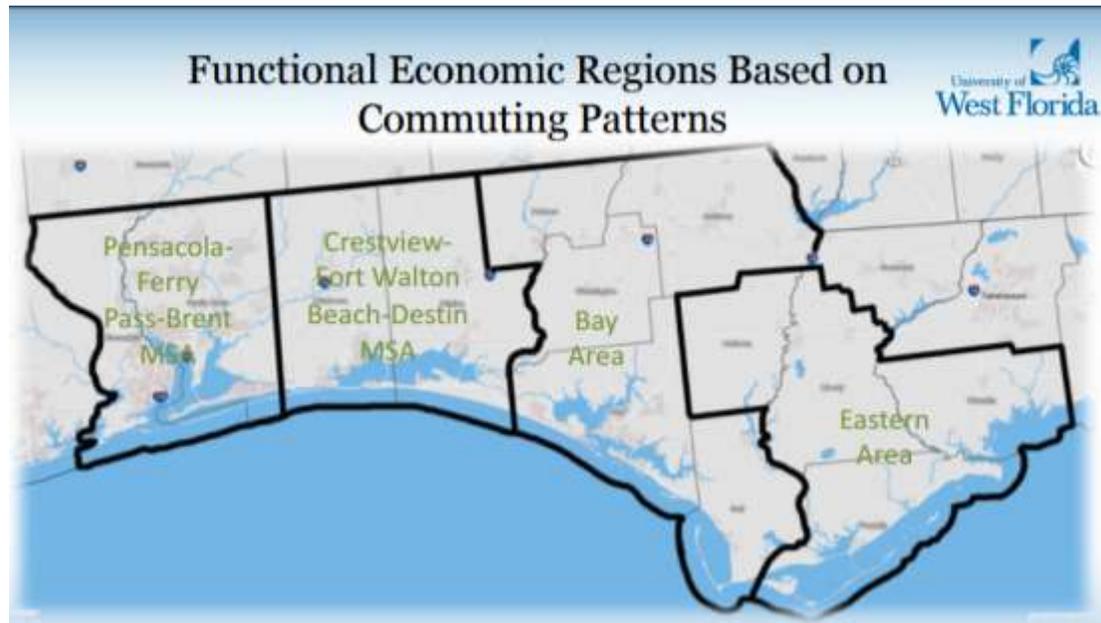
Select an Option

FLORIDA JOBS by Occupation									
Workforce Development Area 5 - Gadsden, Leon, and Wakulla Counties									
Occupation	Code	Title	Employment		2016 - 2024		2018		Median Hourly Wage (\$)**
			2016	2024	Jobs	Percent Change*	Jobs	Median	
Total, All Occupations	00000		185,571	199,069	14,388	7.7	49,197	NA	NA
Management Occupations	11000		9,556	9,161	-485	-5.1	1,838	NA	NA
111000 Top Executive			2,851	2,223	-174	-6.5	562	NA	NA
111011 Chief Executive			899	364	-5	-1.7	46	90.50	Bech
11 and Operations Managers			1,552	1,871	183	9.9	301	51.00	Asoc
11 and Sales Managers			50	59	9	6.0	9	21.30	Bech
11 and Public Relations & Sales Managers			439	474	35	8.0	124	NA	NA
11 and Marketing and Promotions Managers			25	28	3	12.0	9	33.96	Bech
11 and Training Managers			628	143	-12	-9.4	36	43.36	Bech
11 and Management Analysts			211	228	17	8.1	56	59.82	Bech
11 and Relations and Fundraising Managers			75	78	3	4.0	23	51.81	Bech
11 and Specialties Managers			1,164	1,256	92	7.9	346	NA	NA
11 and Information Services Managers			337	378	41	12.2	55	51.03	Asoc
11 and Information Systems Managers			246	279	34	9.8	46	50.55	Bech
11 and Information Technology Managers			352	385	33	9.4	78	49.60	Bech
11 and Production Managers			48	48	1	2.1	12	50.21	Asoc
11 and Mining Managers			31	29	-2	-6.5	6	45.24	Asoc
11 and Production, Storage, and Distribution Managers			183	165	-18	-9.8	29	41.52	Asoc
11 and Insurance and Benefits Managers			53	13	-4	-7.5	3	30.24	Asoc
11 and Human Resources Managers			59	68	9	15.2	23	45.05	Bech
11 and Training and Development Managers			35	16	-1	-6.7	4	47.00	Asoc
11 and Management Occupations			6,862	6,176	-214	-3.1	1,806	NA	NA
11 and Production Managers			176	167	-9	-5.1	36	32.41	Asoc
11 and Non-Farm Animal Production, Poultry and Child Care			25	27	2	8.0	5	25.00	Bech
11 and Education, Elementary and Secondary			165	162	-3	-1.8	43	41.97	Bech
11 and Postsecondary Teachers			27	39	12	44.4	9	53.25	Bech
11 and Administration, Postsecondary			34	35	1	2.9	9	41.93	Bech
11 and Technical and Engineering Managers			198	123	-75	-37.9	41	63.29	Bech
11 and Service Managers			179	162	-17	-9.5	42	34.40	Asoc
11 and Health Services Managers			111	118	7	6.3	24	20.29	Asoc
11 and Health Services Managers			289	312	23	8.0	30	46.11	Bech
11 and Science Managers			40	41	1	2.5	11	43.81	Bech
11 and Real Estate and Community Association Managers			524	583	59	11.3	127	26.40	Asoc
11 and Community and Social Services Managers			120	128	8	6.7	33	40.67	Asoc
11 and Other			1,130	1,284	154	13.6	370	37.92	Asoc
11 and Financial Operations Occupations			19,439	20,117	678	3.5	3,735	NA	NA
11 and Operations Specialists			13,784	14,299	579	4.2	2,042	NA	NA
11 and Sales and Retail Buyers, Except Farm Products			53	57	4	7.6	17	22.18	Asoc
11 and Sales Agents, Except Farm Products and Trade			392	288	-104	-26.5	64	23.09	Asoc
11 and Advertising, Promotions, and Marketing Managers			491	549	58	11.8	140	25.43	Photo
11 and Public Affairs, Examiners, and Investigators			1,540	1,540	0	0.0	169	17.22	Photo
11 and Administrative Services and Secretaries			265	287	22	8.3	32	25.26	Asoc
11 and Business Operations Specialists			851	877	26	3.1	195	22.91	Bech
11 and Business Operations Specialists			170	168	-2	-1.2	33	23.03	Bech
11 and Business Operations Specialists			58	64	6	10.3	12	29.90	Bech
11 and Business Operations Specialists			4,192	4,350	158	3.8	828	23.75	Bech
11 and Business Operations Specialists			132	132	0	0.0	21	58.00	Asoc
11 and Business Operations Specialists			131	154	23	17.6	32	26.29	High
11 and Business Operations Specialists			175	166	-9	-5.1	34	18.45	Asoc
11 and Business Operations Specialists			415	423	8	1.9	88	23.51	Bech
11 and Business Operations Specialists			474	571	97	20.5	141	27.28	Bech
11 and Business Operations Specialists			2,884	2,645	-239	-8.3	381	26.84	Asoc
11 and Business Operations Specialists			5,855	5,878	23	0.4	1,473	NA	NA
11 and Business Operations Specialists			3,841	3,278	-563	-14.7	821	23.27	Bech
11 and Business Operations Specialists			112	115	3	2.7	18	21.43	Photo
11 and Business Operations Specialists			270	278	8	3.0	62	25.81	Bech
11 and Business Operations Specialists			27	30	3	11.1	10	33.34	Photo
11 and Business Operations Specialists			217	221	4	1.8	35	23.54	Bech
11 and Business Operations Specialists			316	244	-72	-22.8	46	34.51	Bech
11 and Business Operations Specialists			72	75	3	4.2	10	26.27	Photo
11 and Business Operations Specialists			96	97	1	1.0	23	NA	Asoc
11 and Business Operations Specialists			223	238	15	6.7	48	32.26	Asoc
11 and Business Operations Specialists			891	958	67	7.5	120	NA	Bech
11 and Business Operations Specialists			342	349	7	2.0	24	24.45	Photo
11 and Business Operations Specialists			7,256	7,288	32	0.4	1,441	NA	NA
11 and Business Operations Specialists			5,328	6,751	1,423	26.7	1,842	NA	NA
11 and Business Operations Specialists			886	1,029	143	16.1	231	25.73	Asoc
11 and Business Operations Specialists			84	87	3	3.6	130	27.96	Photo
11 and Business Operations Specialists			471	792	321	68.2	195	39.69	Asoc
11 and Business Operations Specialists			183	187	4	2.2	34	28.16	Bech
11 and Business Operations Specialists			222	266	44	19.8	99	27.90	Photo
11 and Business Operations Specialists			290	384	94	32.4	62	32.15	Asoc

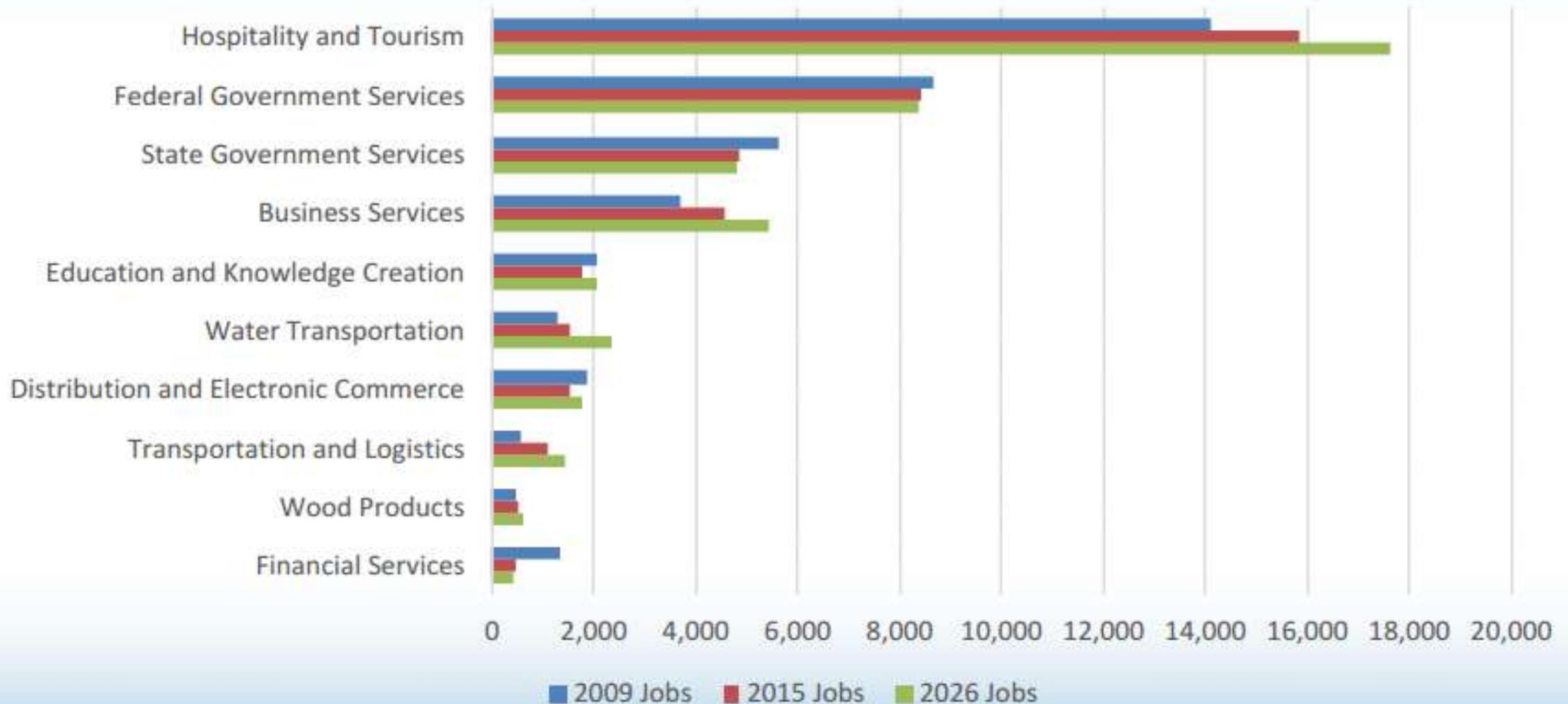
If you have questions about the projections program contact us at

Workforce/Industry Clusters

- Analysis of Cluster by local and regional location
(Rick Harper: University of West Florida)

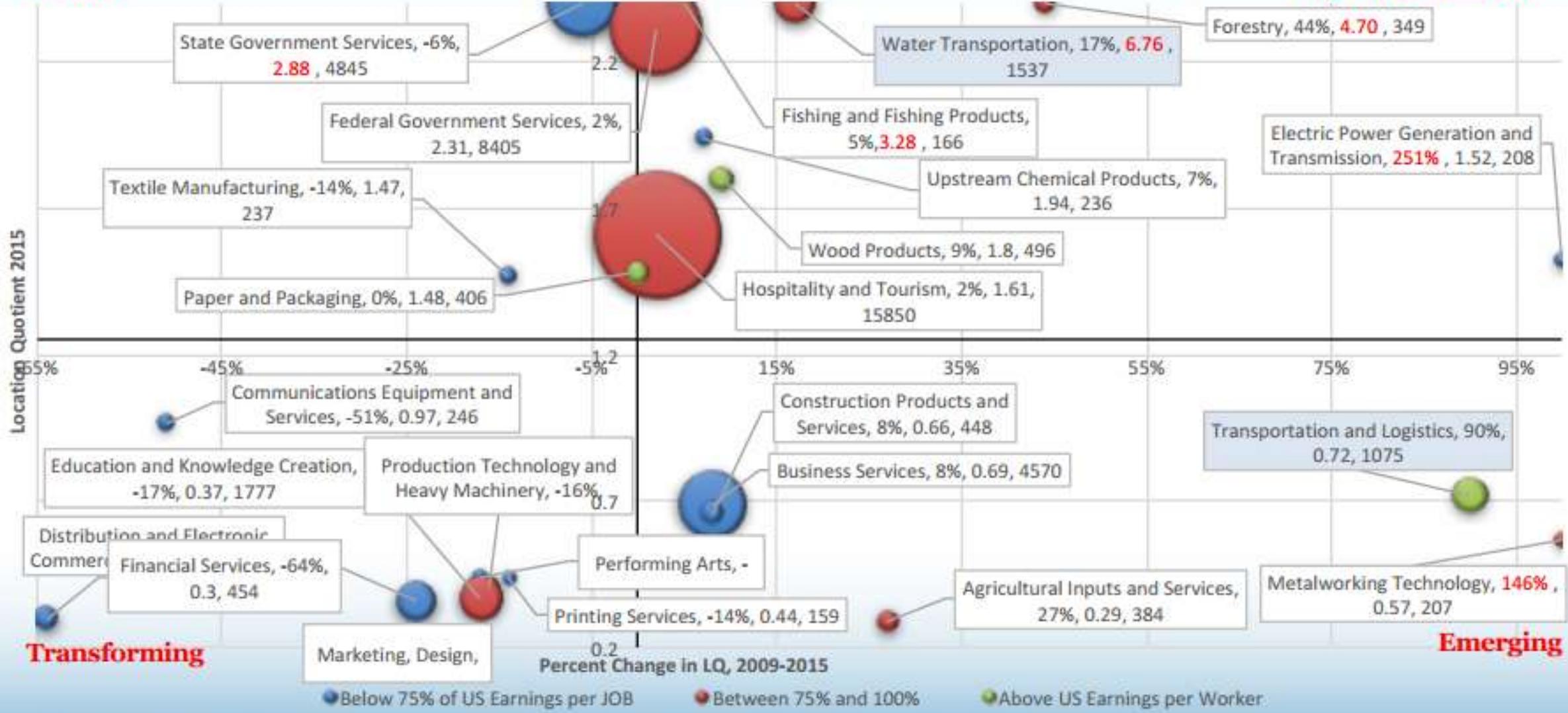


Top Industry Clusters by Employment, Bay Area (2009, 2015, 2026)



Bay Area Traded Cluster Analysis, 2009-2015

Mature

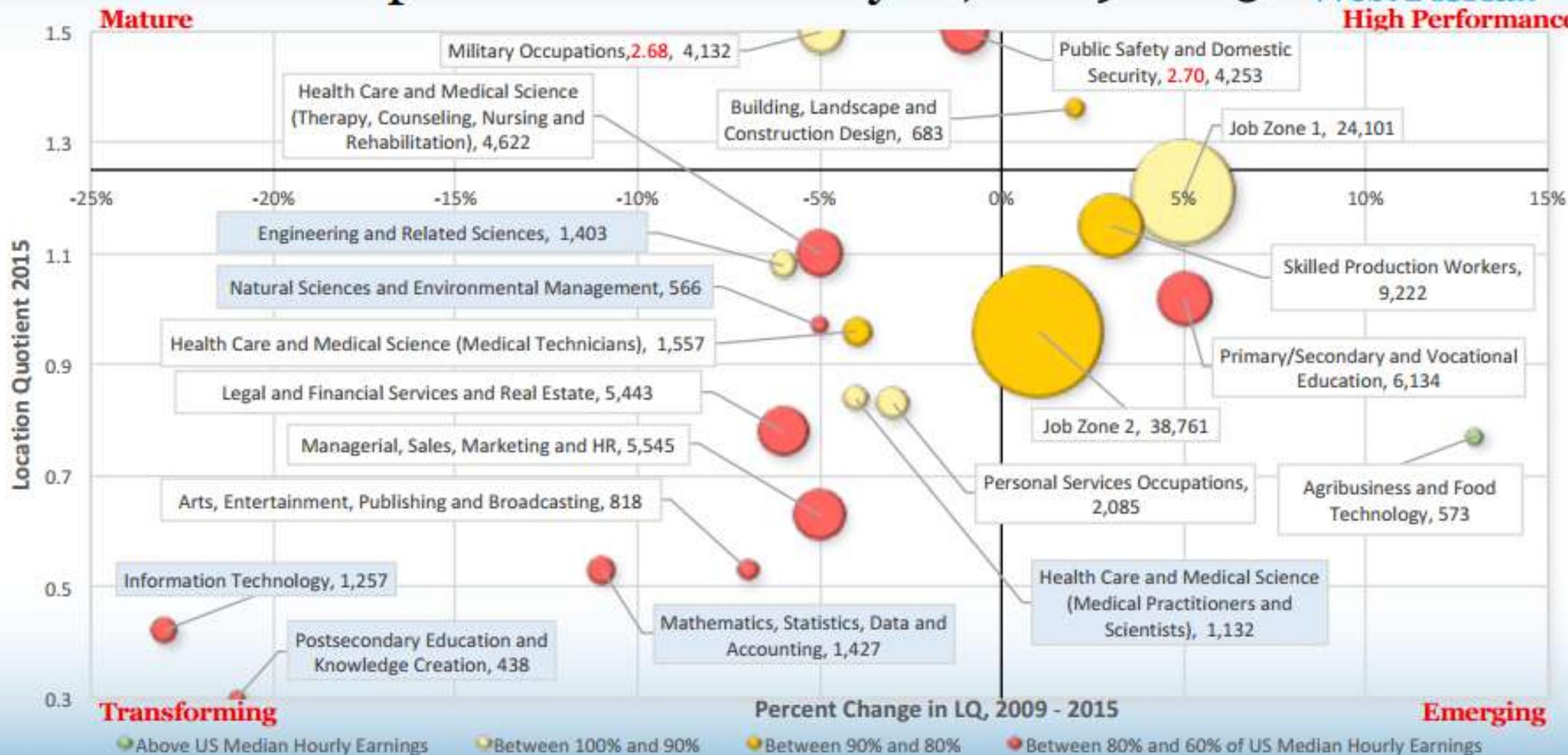


Transforming

Emerging

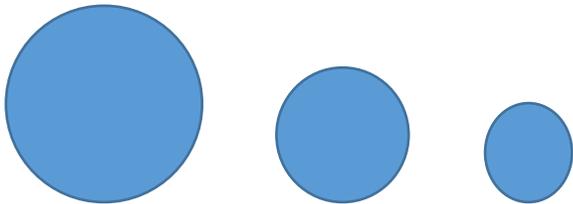
Note: Label includes cluster name, %change in LQ, LQ 2015, and Employment 2015, Data Source: EMSI 2016.2, industry cluster definitions by Michael Porter

Bay Area Occupation Cluster Analysis, 2009-2015



ACTIVITY

- Let's "map" the workforce clusters of "your region" or any community of your choice
- NOTE: This will not be "data-driven" but based solely on your perception of the economy



Think of "Specialized" as High Skill/High Wage and "Non-Specialized" as Low Skill/Low Wage

MATURE INDUSTRIES
Specialization and
Slow or Declining Growth

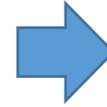
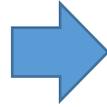
HIGH PERFORMANCE INDUSTRIES
Specialization and
Fast Growth

TRANSFORMING INDUSTRIES
Not Specialized and
Slow or Declining Growth

EMERGING INDUSTRIES
Not Specialized
but Fast Growth

Programs of Study

Program Maps



Programs of Study are selected by market indicators from a variety of data resources.

These must follow “cluster frameworks” as courses are designed to produce graduates in demand by area employers...

Tallahassee Community College

Ignite Your Career. Explore Your Degree Options.

Full List Of Programs

Associate in Science (A.S.)

- Building Construction Management, A.S. (2160)
- Business Management, A.S. (2109)
- Computer Programming and Web Development, A.S. (2168)
- Criminal Justice Technology, A.S. (2138)
- Dental Hygiene, A.S. (2101)
- Drafting and Design Technology, A.S. (2139)
- Early Childhood Development, Education and Management, A.S. (2133)
- Emergency Medical Services (EMT) Technology, A.S. (2104)
- Engineering Technology, A.S. (2103)
- Environmental Science Technology, A.S. (2162)
- Graphics and Web Design Technology, A.S. (2105)
- Health Information Technology, A.S. (2100)

2016-17-Building-Const: X

www.tcc.fl.edu/media/divisions/advising/academic-maps/2016-17-Building-Construction-Mana

2016-17-Building-Construction-Management-AS-MAP.p... 1 / 3

2016 – 2017 INDUSTRY, MANUFACTURING, & CONSTRUCTION META-MAJOR ASSOCIATE IN SCIENCE (AS) IN BUILDING CONSTRUCTION MANAGEMENT DEGREE MAP

Meta-majors are academic pathways to help you meet your educational goals. Included below is a sample schedule for a full-time in college student on an Associate of Science degree track in Building Construction Management. While you may not be a full-time student, you are responsible for completing the "Mandatory Hourly Requirements" on the right. Registration holds will be placed on students who do not meet the "Mandatory Hourly Requirements" and those students will be required to see an advisor. Summer semesters are not included in this plan but are an option for taking courses. Please be advised that not all types of financial aid will cover the cost of summer semester courses.

COURSE RECOMMENDATIONS ARE BASED ON GENERAL COURSE REQUIREMENTS.

SAMPLE FULLTIME SCHEDULE		MANDATORY HOURLY REQUIREMENT	
TERM 1	Courses	By 15 Completed Credit Hours	
Communications State Core Course	ENC1101	ENC1101	
Mathematics State Core Course	**MAC1105	MAC1105	
Program Requirement Course	**BCT2705 (Fall only)	Attend First Semester Advising Workshop	
Program Requirement Course	EGS1002	Meet with an Advisor	
Program Requirement Course	**EQN1111C	Declare a Meta-Major	
TOTAL SEMESTER HOURS	15 HOURS	2.0 or higher TCC GPA & Cumulative GPA	
COMPLETED HOURS	7.5 HOURS		
TERM 2	Courses	By 30 Completed Credit Hours	
Science State Core Course	*	Receive AutoDesk Auto CAD certification	
Program Requirement Course	**BCN2241 (Spring only)	Receive IC ³ certification	
Program Requirement Course	**BCN2230 (Spring only)	Visit Career Center	
Program Requirement Course	CGS1060	2.0 or higher TCC GPA & Cumulative GPA	
Program Requirement Course	**ETD1320		
TOTAL SEMESTER HOURS	15 HOURS		
COMPLETED HOURS	30 HOURS		
TERM 3	Courses	By 45 Completed Credit Hours	
Humanities State Core Course	*	Graduation Check Workshop	
Program Requirement Course	BCN1040	Meet with Career Placement Coordinator in TCC Career Center	
Program Requirement Course	**BCN1001	2.0 or higher TCC GPA & Cumulative GPA	
Program Requirement Course	BCN2704 (Fall only)		
Program Requirement Course	SUR2100C (Fall only)		
TOTAL SEMESTER HOURS	15 HOURS		
COMPLETED HOURS	45 HOURS		
TERM 4	Courses	LAST SEMESTER	
Program Requirement Course	ETI1701	*** Apply for Graduation!***	
Program Requirement Course	BCN2405	2.0 or higher TCC GPA & Cumulative GPA	
Program Requirement Course	MAN2021 or IDS2941	25% credit hours earned at TCC	
Social Science State Core Course	*		
Program Requirement Course	BCT2770 (Spring only)		
TOTAL SEMESTER HOURS	15 HOURS		
COMPLETED HOURS	60 HOURS TO GRADUATE		

Important Things to Know:

- Developmental Education courses are not included in this plan.
- MAT1033 is a required pre-requisite for MAT and STA2023; it counts as an elective, not a State or TCC core Mathematics course.

PROGRAM LEVEL OUTCOMES (PLOs)

Driven by Frameworks

Drafting and Design Associate of Science

Program Learning Outcomes:

PLO #1: identify and explain the specific disciplines and careers within the broad categories of engineering

PLO#2: apply basic engineering fundamentals, technical math and problem solving techniques across all engineering areas

PLO#3: develop and practice professional and ethical standards that govern interpersonal and career behaviors

PLO#4: design and assess expert engineering drawings using manual drafting, computer software (2D & 3D) techniques and measurement standards

PLO#5: Illustrate basic GIS and surveying skills

COURSE LEVEL OUTCOMES (SLOs)

Driven by PLOs

Autodesk Revit ETD 2390

Upon completion of this course students should attain:

1. A working knowledge of architectural computer modeling
2. Basic drafting skills in 3 dimensional drawing platform for:
 - a. Building Information Management
 - b. Phased Construction
 - c. Drawing productions and schedule development
 - d. Parametric building models
 - e. The Revit Workflow
 - f. Creating and Modifying Building sections...

Florida Career Cluster: Manufacturing

Engineering Technology AS Degree

FRAMEWORK

2017 – 2018

Florida Department of Education
Student Performance Standards

Program Title: Engineering Technology
CIP Numbers: 1615000001
Program Length: 60 credit hours
SOC Code(s): 17-3023, 17-3026, 17-3027, 17-3029, 51-4012

The following table is a summary of the standards for this program. The student will be able to:

20.0	Demonstrate knowledge of business processes and materials processes.—The student will be able to:
20.01	Explain current manufacturing processes.
20.02	Describe the use of current manufacturing machines, operating systems and mechanisms.
20.03	Explain manpower needs and skills needed in assembly operations.
20.04	Describe the factors considered for tool design, maintenance, procurement and handling.
20.05	Demonstrate knowledge of gages, gage and fixtures.
20.06	Analyze process changes for impact on product.
20.07	Apply process principles and practice of production timing.
20.08	Identify effect of time and motion on productivity.
20.09	Identify effect of production changes on productivity.
20.10	Demonstrate knowledge of raw materials properties and requirements.
20.11	Follow engineering specifications and requirements in equipment setup.
20.12	Explain the importance of routine maintenance.
20.2	Demonstrate an integrated computer aided design.—The student will be able to:
20.21	Apply current industrial computer aided design practices.
20.22	Apply standard dimensioning and tolerance rules.
20.23	Input and export various file types.
20.24	Interpret technical drawings.
20.3	Demonstrate a fundamental understanding of electronics and electrics.—The student will be able to:
20.31	Use appropriate electrical circuit drawing techniques.
20.32	Apply knowledge of AC/DC theory.
20.33	Solve circuit problems using appropriate units and notation.
20.34	Solve problems using Ohm's Law.
20.35	Solve problems using Watt's Law.
20.36	Solve problems involving series and parallel impedances in circuits.
20.37	Solve problems involving capacitance in circuits.
20.38	Solve problems involving inductance in circuits.
20.39	Solve AC problems involving peak value, instantaneous, average value and RMS values.
20.4	Demonstrate an understanding of safety, health, and environmental requirements.—The student will be able to:
20.41	Interpret appropriate Personal Protective Equipment (PPE).
20.42	Follow appropriate safety procedures.
20.43	Follow applicable safety and environmental laws and regulations.
20.44	Maintain a clean and safe work environment.
20.45	Maintain personal protection equipment.
20.46	Report unsafe conditions and practices.
20.47	Locate emergency equipment, exits, and alarms.
20.48	Comply with established safety practices.
20.49	Explain appropriate fire extinguishing procedures.
20.50	Explain when a machine or a process should be stopped or investigated on unsafe condition.
20.51	Demonstrate knowledge of regulatory agency fines and requirement for corrective actions.
20.52	Demonstrate knowledge of government and company procedures, rules and regulations concerning student investigations.
20.53	Use and evaluate information resources such as OSHA, Safety Data Sheets.
20.54	Describe safe handling, marking, monitoring, and transportation of hazardous materials.

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Engineering Technology: Advanced Manufacturing

Specialization Concepts and Content: The purpose of this program is to prepare students for initial employment with an occupational title as a Manufacturing Engineering Technician or Advanced Manufacturing or Production Technician in various specialized areas, or to provide supplemental training for persons previously or currently employed in these occupations.

Standards

After successfully completing this program, the student will be able to perform the following:

12. Understand, operate, troubleshoot, and maintain pneumatic, hydraulic, and electromechanical components and/or systems.
13. Identify lean and six sigma concepts in manufacturing environments.
14. Operate industrial automation systems.
15. Troubleshoot industrial automation systems.
16. Apply the principles of robotics to automated systems....

Florida 2017-18 CTE Curriculum Frameworks

The Career & Technical Education (CTE) Programs section is responsible for developing and maintaining educational programs that prepare individuals for occupations important to Florida's economic development. **Each program is aligned to a career cluster and is detailed in curriculum frameworks.** With partners from education, business and industry, and trade associations, the curriculum frameworks include program standards that are both academically integrated and responsive to business and industry.

SAMPLES

- [Agriculture, Food & Natural Resources](#)
- [Architecture & Construction](#)
- [Arts, A/V Technology & Communication](#)
- [Business, Management & Administration](#)
- [Education & Training](#)
- [Energy](#)
- [Engineering & Technology Education](#)
- [Finance](#)
- [Government & Public Administration](#)
- [Health Science](#)
- [Hospitality & Tourism](#)

Florida's Career Clusters and Program Examples

Agriculture, Food & Natural Resources
Agriculture Biotechnology, Forestry, Veterinary Assisting

Architecture & Construction
Building Trades, Carpentry, Drafting

Arts, A/V Technology & Communication
Digital Design, Television Production

Business Management & Administration
Accounting Applications, International Business

Education & Training
American Sign Language Interpreting, Early Childhood Ed

Energy
Energy Technician, Solar Energy Technology

Engineering & Technology Education
Applied Robotics, Production Technology

Finance
Banking-Financial Services, Global Finance

Government & Public Administration
Emergency Planning and Response, Public Works

Health Science
Emergency Medical Technician, Practical Nursing

Hospitality & Tourism
Culinary Arts, Restaurant Management

Human Services
Barbering, Cosmetology, Nails Specialty

Information Technology
Applied Info Technology, Game/Simulation/Animation

Law, Public Safety & Security
Criminal Justice Operations, Introduction to Fire Fighting

Manufacturing
Automation and Production Technology, Welding

Marketing, Sales & Service
Entrepreneurship, International Marketing

Transportation, Distribution & Logistics
Aircraft/Airframe Mechanics, Automotive Collision Repair

Division of Career and Adult Education
www.fde.org/academics/career-adult-edu
850-245-0446

Career and Technical Education

 CTE Learning that works for Florida



Example Local College Programs

PROGRAM REQUIREMENTS

Communications Area		CH
+*ENC120L, English I		3
+*ENC110L, English Composition II		3
Humanities Area		3
Visual and Performing Arts	See General Education Requirement	
Philosophy/Religion	See General Education Requirement	
Literature	See General Education Requirement	
Mathematics Area		
+*MAC1100, College Algebra		3
Social Sciences Area		
Behavioral Sciences	+PSY2013 or +PSY2090, Psychology/Sociology	3
Major Courses		
+EET104C, Introduction to Electronics		3
+ETD1320, AutoCAD		3
+ETI1701, Industrial Safety		3
+ETD1110, Intro to Quality Assurance		3
+ET1431, Manufacturing Processes I		3
+ET2000C, Applied Mechanics		3
Automation & Advanced Manufacturing Option (27 hrs): This track specializes in automation, robotics, and process control with emphasis on computer-controlled systems for industrial manufacturing, system integration, instrumentation, simulation, and mechatronics. The program skills used for careers in manufacturing, theme park industries, military applications, water filtration and purification plants, and much more. Graduates are prepared to work as controls engineers, system integration, robotic technicians, industrial programmers, process control engineers, field service technicians, simulation technicians, industrial sales engineers, and industrial maintenance technicians.		
+EET1090C, AC/DC Circuits		4
+EET1112C, Digital Circuits		4
+EET1112C, Industrial Electronics		4
+EET2442C, Programmable Logic Controllers		3
+EET2539C, Process Control & Instrumentation		3
+EET2700C, Electro-Hydraulics & Pneumatics		3
Choose two of the following: +EET2280C, Data Acquisition & Control Systems; +ETS2006C, Robotics; +EET2242C, LabVIEW Instrumentation; +ETS2021C, Motors & Motion Control		



2016 – 2017 INDUSTRY, MANUFACTURING, & CONSTRUCTION META-MAJOR ASSOCIATE IN SCIENCE (AS) IN BUILDING CONSTRUCTION MANAGEMENT DEGREE MAP

Meta-majors are academic pathways to help you meet your educational goals. Included below is a sample schedule for a full-time college student on an Associate of Science degree track in Building Construction Management. While you may not be a full-time student, you are responsible for completing the "Mandatory Hourly Requirements" on the right. Registration holds will be placed on students who do not meet the "Mandatory Hourly Requirements" and those students will be required to see an advisor. Summer semesters are not included in this plan but are an option for taking courses. Please be advised that not all types of financial aid will cover the cost of summer semester courses.

COURSE RECOMMENDATIONS ARE BASED ON GENERAL COURSE REQUIREMENTS.

SAMPLE FULLTIME SCHEDULE		MANDATORY HOURLY REQUIREMENT
TERM 1	Courses	By 15 Completed Credit Hours
	Communications State Core Course ENCI101	ENCI101
	Mathematics State Core Course **MAC1103	MACT105
	Program Requirement Course **BCT2905 (Fall only)	Attend First Semester Advising Workshop
	Program Requirement Course EGS1003	Meet with an Advisor
	Program Requirement Course **EGN1111C	Declare a Meta-Major
	TOTAL SEMESTER HOURS 15 HOURS	2.0 or higher TCC GPA & Cumulative GPA
	COMPLETED HOURS 15 HOURS	
TERM 2	Courses	By 30 Completed Credit Hours
	Science State Core Course *	Receive AutoDesk AutoCAD certification
	Program Requirement Course **BOH2241 (Spring only)	Receive IC ³ certification
	Program Requirement Course **BOH2230 (Spring only)	Visit Career Center
	Program Requirement Course CGS1060	2.0 or higher TCC GPA & Cumulative GPA
	Program Requirement Course **ESD1320	
	TOTAL SEMESTER HOURS 15 HOURS	
	COMPLETED HOURS 30 HOURS	
TERM 3	Courses	By 45 Completed Credit Hours
	Humanities State Core Course *	Graduation Check Workshop
	Program Requirement Course BOH1040	Meet with Career Placement Coordinator in TCC Career Center
	Program Requirement Course **BOH1001	2.0 or higher TCC GPA & Cumulative GPA
	Program Requirement Course BOH2704 (Fall only)	
	Program Requirement Course SUR2100C (Fall only)	
	TOTAL SEMESTER HOURS 15 HOURS	
	COMPLETED HOURS 45 HOURS	
TERM 4	Courses	LAST SEMESTER
	Program Requirement Course ETI1701	*** Apply for Graduation***
	Program Requirement Course BCN2405	2.0 or higher TCC GPA & Cumulative GPA
	Program Requirement Course HAN2021 or EGS2941	25% credit hours earned at TCC
	Social Science State Core Course *	
	Program Requirement Course BCT2770 (Spring only)	
	TOTAL SEMESTER HOURS 15 HOURS	
	COMPLETED HOURS 60 HOURS TO GRADUATE!	

***Please refer to the [TCC Catalog](#) for specific courses that meet this requirement.

Failure to complete items in BOLD will result in Registration Hold. Students must see an Advisor to have the hold(s) removed.

Developing Workforce Programs at each College

- Local Advisory Groups by Program
- Common Course Numbering System
- Course Descriptions
- Course Syllabi
- Learning Outcomes
- Course Quality Assessment
- Outside Professional Organization Standards
- Regional Accreditation Requirements

Local Programs Part of the Broader Vision



Pre-
Eminent

2+2
Degrees
4yr
Bachelors



Pre-
Employment

Certificate &
Associate
Degrees



Pre-
Entrepreneur

“Buffet”
pathways and
Programs

Economic Development = credit + noncredit + community



Growth Company Development

Helping Existing Bus & Ind Expand
Market Prospecting & Bus Analysis



Workforce Development

Training Existing Workforce &
Creating K-20 CTE Talent Pipelines



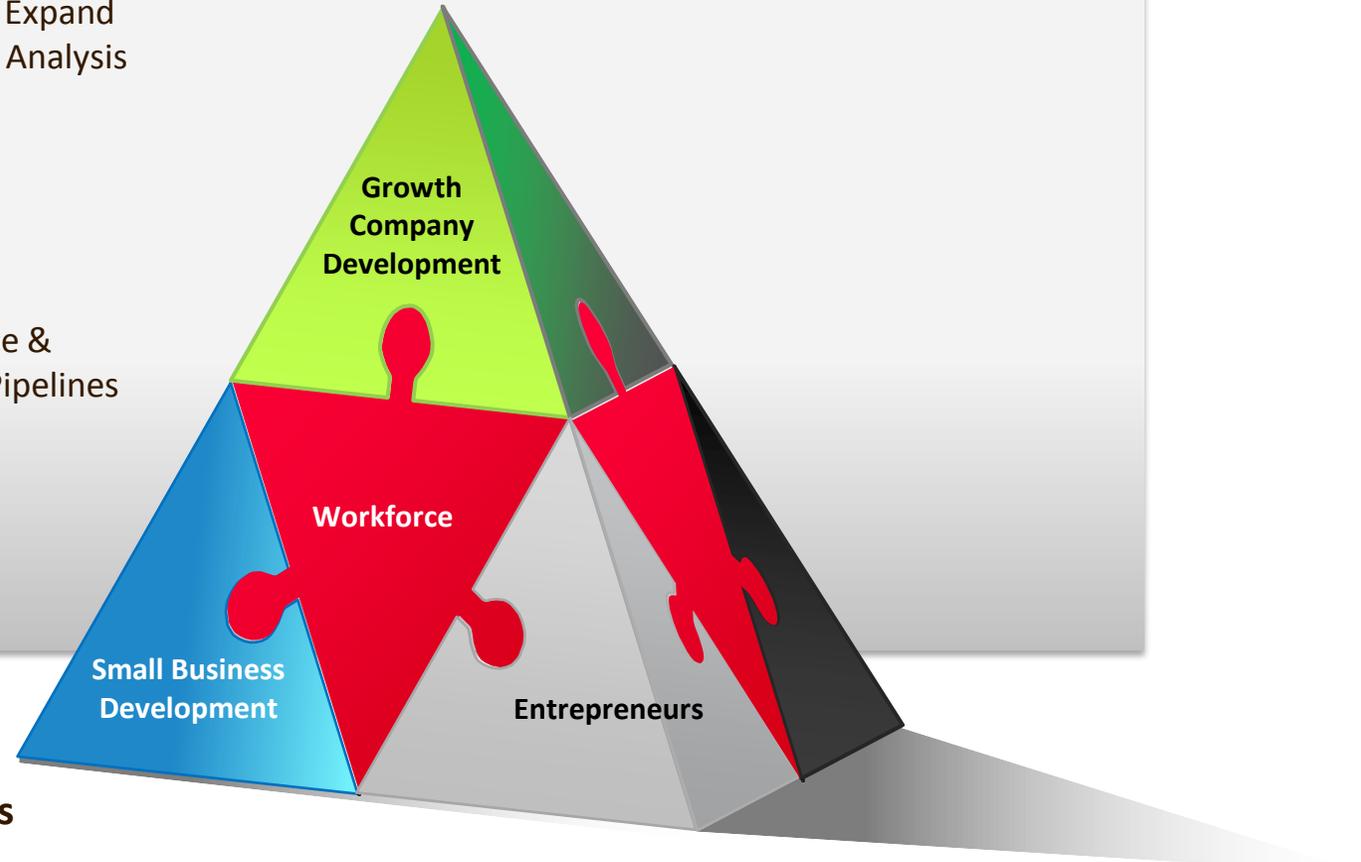
Small Business Development

SBDC & Services
Housed Within



Growing Entrepreneurs

"Idea to Market" and
Mining "latent" Intellectual Property

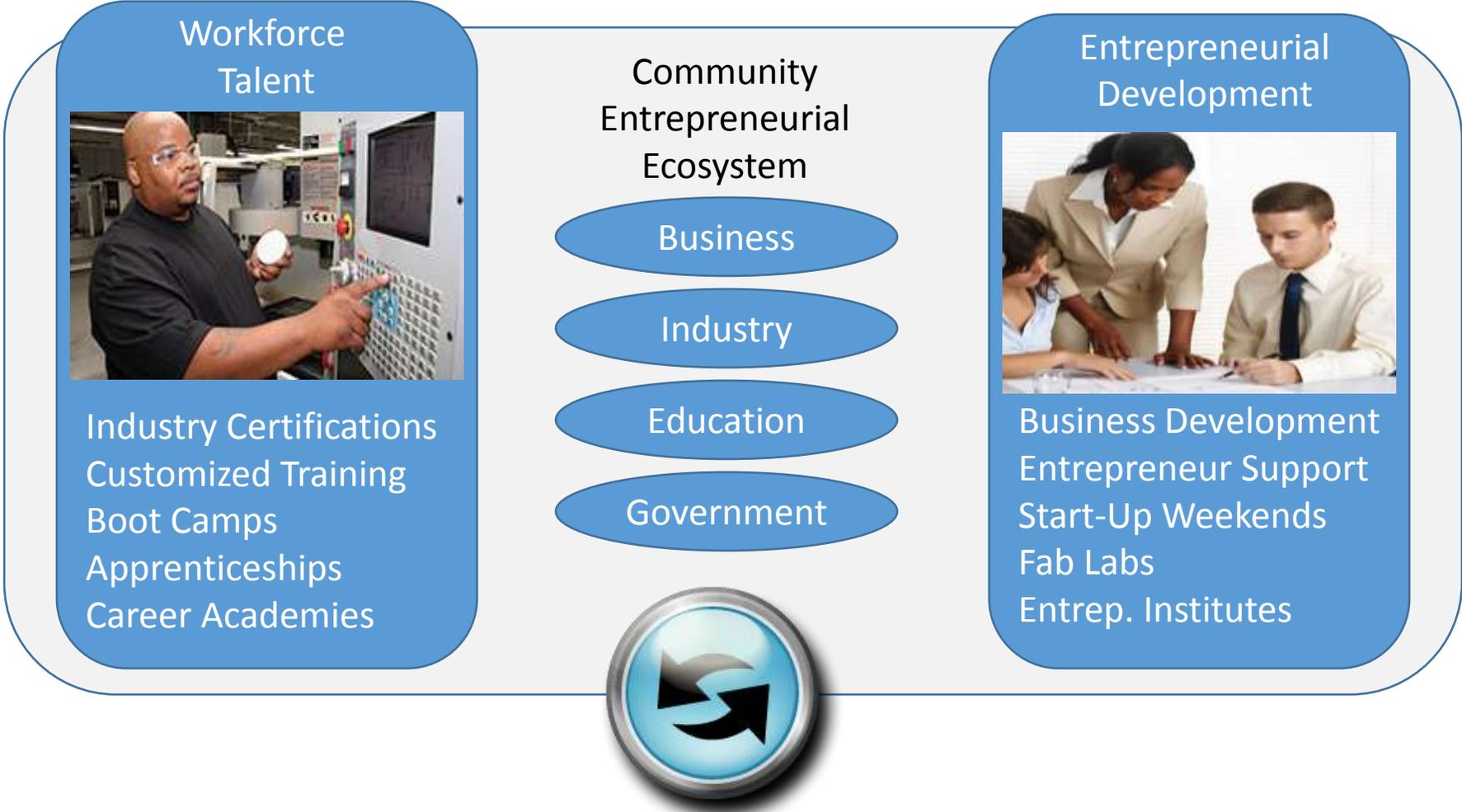


Elements of a Sustainable Workforce Program Plan

- **Culture** will win out over even the best strategies
- **Nurture Entrepreneurship** as the base of a sustainable economic plan as part of your cultural engagement
- **Align your Academic Programs** to local and regional workforce needs
- **Genuinely Engage Business and Industry** in the formation and adaptation of all certificate and degree pathways feeding their needs
- **Set the Expectation** that business and industry must financially assist in the design, equipping,
- **Feed the Talent Chain** from early education up through higher education in targeted verticals based on regional assets and geography as well as global trends
- **Drive Decisions through Data** whenever possible and share with stakeholders

Workforce Talent & Entrepreneurial Development

Aligning education, business, and industry to grow workforce talent and expand economic development in our community through collective entrepreneurialism.



LINKS:

CCAP Modules and Readings:

<http://lsi.fsu.edu/ccap/>

Florida College System reports:

<https://www.floridacollegesystem.com/>