

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

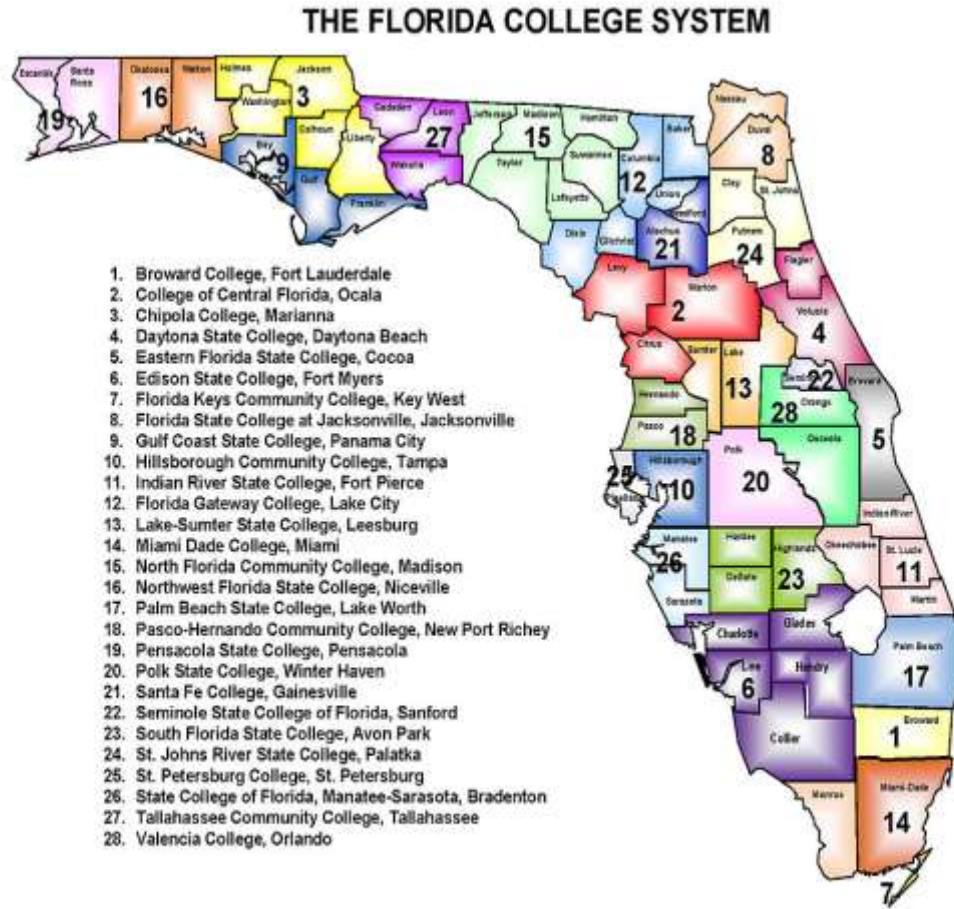
- The mission of the Florida College System is to *provide access to high-quality, affordable academic and career educational programs that maximize student learning and success, **develop a globally competitive workforce** and respond rapidly to diverse state and community needs.*



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

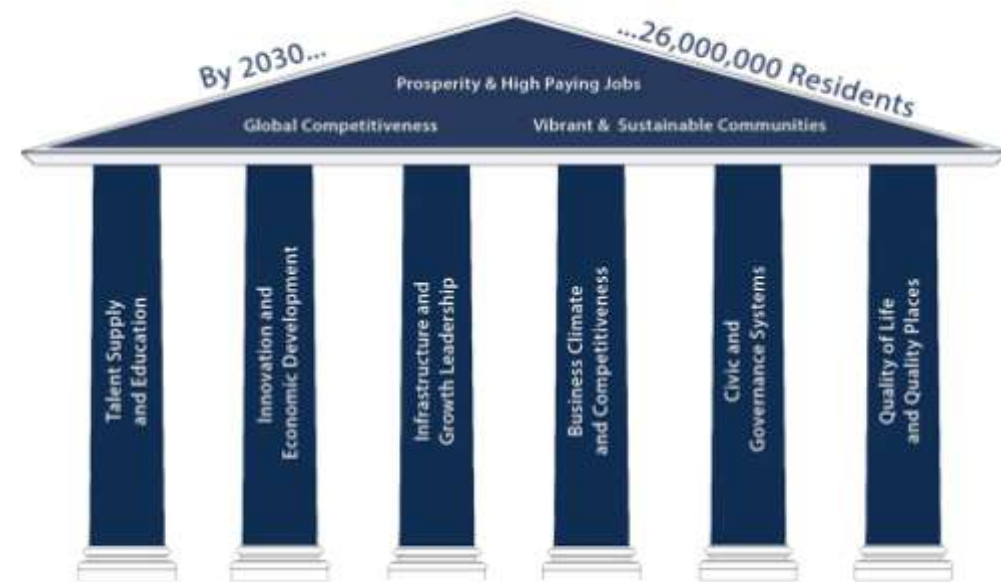
- Planning & Development
- Transportation & Logistics
- Water
- Energy
- Communications
- Waste Management
- Environmental Issues
- Risk Preparedness & Mitigation

## 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.

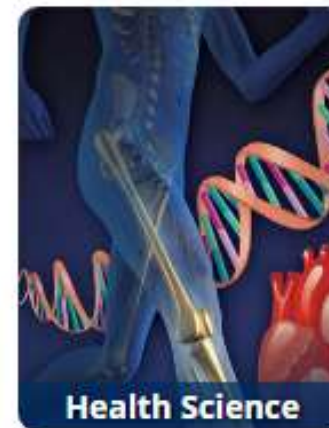
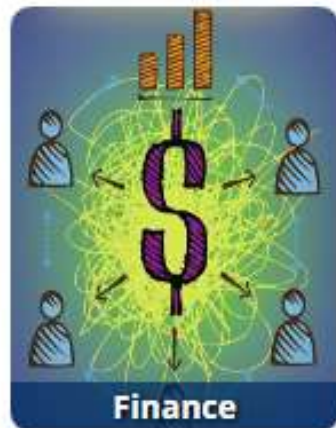


# Resources for Academic Program Planning

- 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

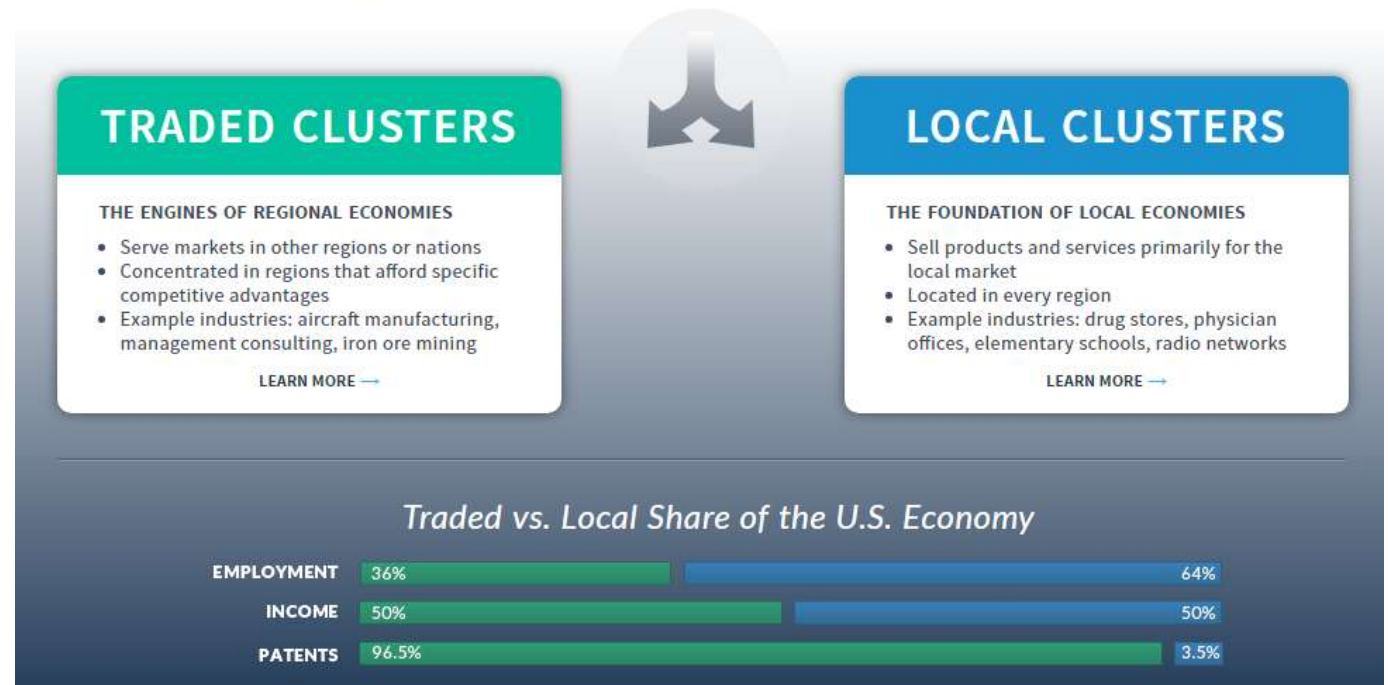
- National
- Regional
- State
- Local



# 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<sup>®</sup> 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<sup>®</sup> 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.

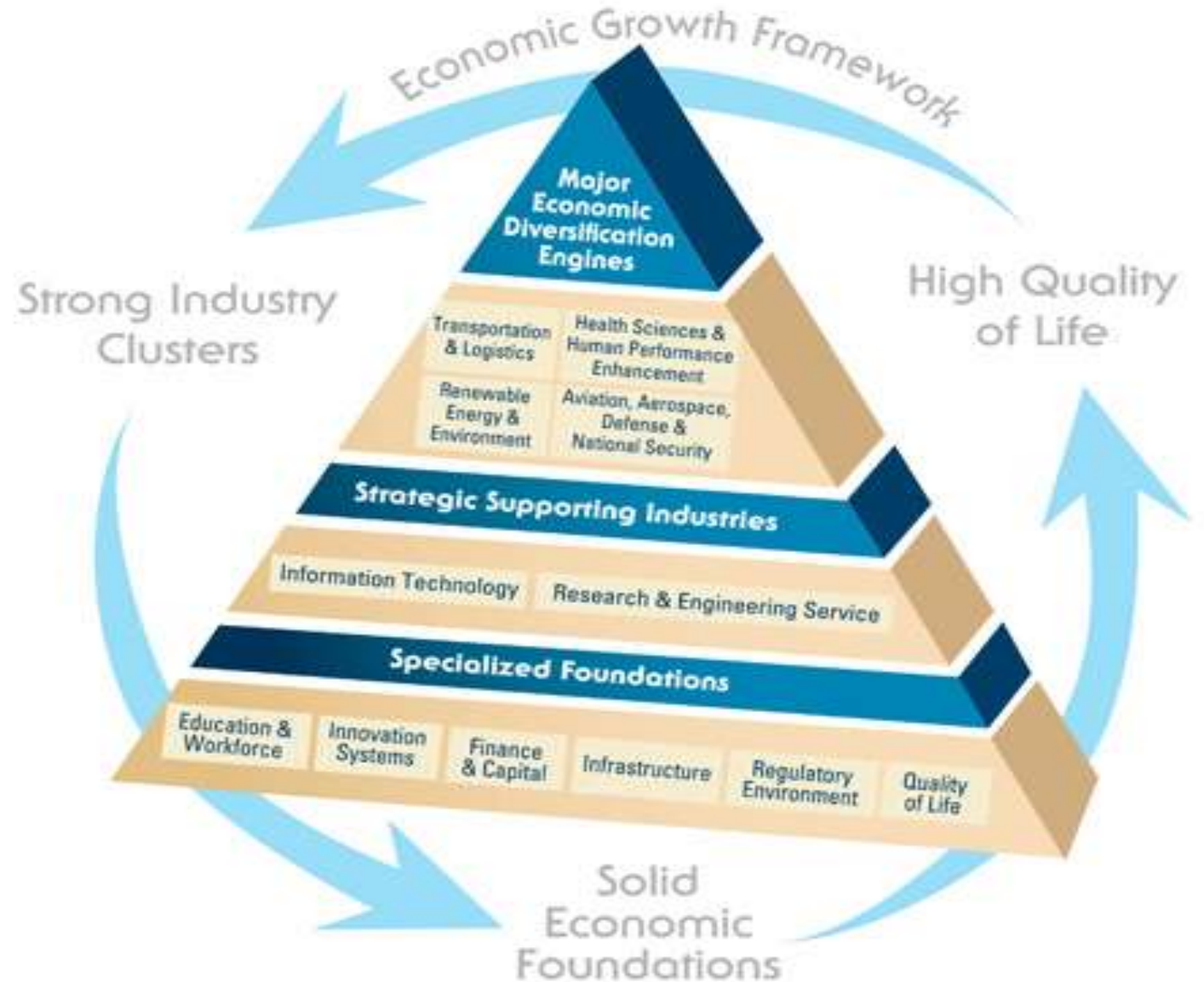
As such, it helps students discover their interests and their passions, and empowers them to choose the educational pathway that can lead to success in high school, college and career.

# 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)

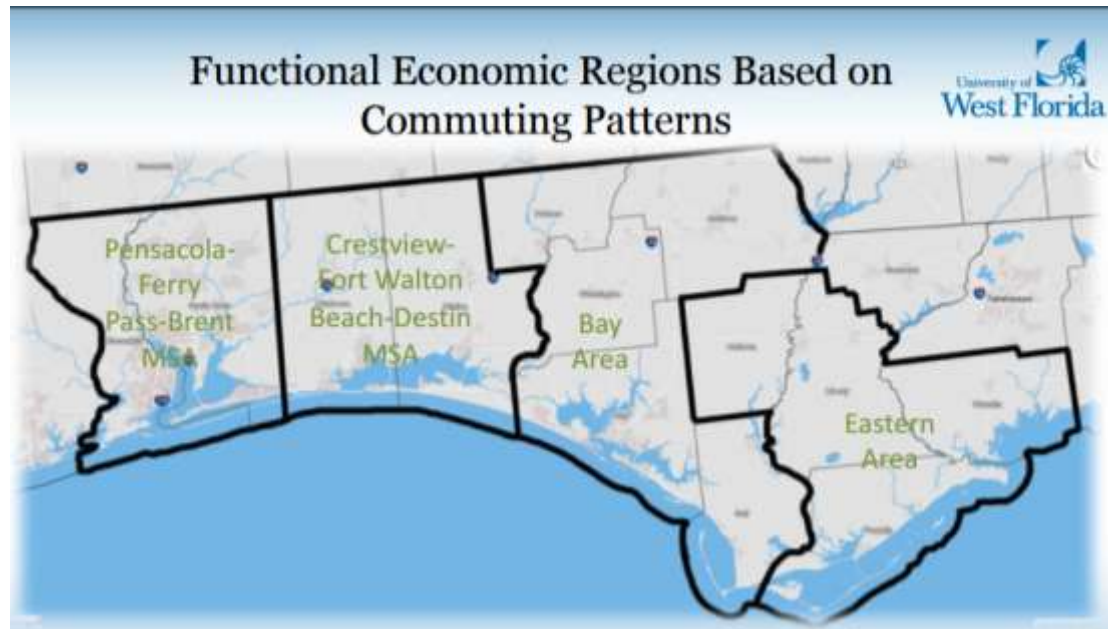
Select an Option

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*	Median	Wage (\$**)	
<b>Total, All Occupations</b>	00000		185,571	199,069	14,288	7.7	49,197	NA	NA
<b>Management Occupations</b>	11000		9,556	9,161	-485	-5.1	1,838	NA	NA
<b>Top Executive</b>	11100		2,851	2,223	-174	-6.5	562	NA	NA
<b>Chief Executive</b>	11101		899	364	-5	-1.7	46	90.50	Bech
<b>General and Operations Managers</b>			1,552	1,871	183	9.9	301	51.00	Asoc
<b>Administrative Services Managers</b>			50	59	9	6.0	9	21.30	Bech
<b>Human Resources Managers</b>			439	474	35	8.0	124	NA	NA
<b>Marketing and Promotions Managers</b>			25	28	3	12.0	9	33.96	Bech
<b>Sales Managers</b>			628	143	-12	-9.4	36	43.36	Bech
<b>Transportation, Storage, and Distribution Managers</b>			211	228	17	8.1	55	59.82	Bech
<b>Business Operations Managers</b>			75	78	3	4.0	23	51.81	Bech
<b>Information Systems Managers</b>			1,164	1,256	82	7.3	346	NA	NA
<b>Computer and Information Systems Managers</b>			337	378	41	12.5	55	51.03	Asoc
<b>Software Developers, Quality Assurance Engineers, and Testers</b>			246	279	34	13.8	46	50.55	Bech
<b>Information Systems Managers</b>			352	385	33	9.7	78	49.60	Bech
<b>Operations Managers</b>			48	48	1	2.1	12	50.21	Asoc
<b>Production Managers</b>			31	29	-2	-6.5	6	45.24	Asoc
<b>Transportation, Storage, and Distribution Managers</b>			183	165	-18	-10.0	29	41.52	Asoc
<b>Construction Managers</b>			53	13	-40	-75.0	3	30.24	Asoc
<b>Human Resources Managers</b>			59	68	9	15.3	23	45.05	Bech
<b>Management Occupations</b>			75	76	1	6.7	4	47.00	Asoc
<b>Management Occupations</b>			6,802	6,175	-214	-3.6	1,806	NA	NA
<b>Education and Training Occupations</b>			576	597	21	3.7	86	32.41	Asoc
<b>Child, Family, and Social Services Occupations</b>			25	27	2	8.0	5	25.00	Bech
<b>Education Administrators, Elementary and Secondary</b>			195	182	-7	-4.5	43	41.97	Bech
<b>Education Administrators, Postsecondary</b>			27	39	12	44.4	9	53.25	Bech
<b>Education Administrators, All Other</b>			34	35	1	2.9	9	41.93	Bech
<b>Architectural and Engineering Managers</b>			198	123	-75	-37.9	41	63.29	Bech
<b>Service Managers</b>			179	182	3	1.7	42	34.40	Asoc
<b>Food Service Managers</b>			111	118	7	6.3	24	20.29	Asoc
<b>Health Services Managers</b>			299	312	13	4.3	30	46.11	Bech
<b>Science Managers</b>			40	41	1	2.5	11	43.81	Bech
<b>Real Estate and Community Association Managers</b>			524	580	56	10.7	127	26.40	Asoc
<b>Community and Social Services Managers</b>			120	128	8	6.7	33	40.67	Asoc
<b>Arts and Crafts Managers</b>			11	1,284	1,273	11,600.0	379	37.92	Asoc
<b>Business and Financial Operations Occupations</b>			19,439	20,117	678	3.5	3,735	NA	NA
<b>Operations Specialists</b>			13,734	14,299	579	4.2	2,042	NA	NA
<b>Sales and Retail Buyers, Except Farm Products</b>			53	57	4	7.6	17	22.18	Asoc
<b>Buying Agents, Except Farm Products and Trade</b>			392	288	-104	-26.5	64	23.09	Asoc
<b>Advertising, Promotions, and Marketing Managers</b>			497	549	52	10.5	140	25.43	Photo
<b>Public Relations and Fundraising Managers</b>			1,540	1,540	0	0.0	169	17.22	Photo
<b>Administrative Services Occupations</b>			265	287	22	8.3	32	25.26	Asoc
<b>Business Operations Specialists</b>			857	877	20	2.3	195	22.91	Bech
<b>Business Operations Specialists</b>			170	168	-2	-1.2	33	23.03	Bech
<b>Business Operations Specialists</b>			58	64	6	10.3	12	29.90	Bech
<b>Business Operations Specialists</b>			4,192	4,350	158	3.8	828	23.75	Bech
<b>Business Operations Specialists</b>			132	132	0	0.0	21	58.00	Asoc
<b>Business Operations Specialists</b>			131	154	23	17.6	32	26.29	High
<b>Business Operations Specialists</b>			175	166	-9	-5.1	34	18.45	Asoc
<b>Business Operations Specialists</b>			415	423	8	1.9	88	23.51	Bech
<b>Business Operations Specialists</b>			474	571	97	20.5	141	27.28	Bech
<b>Business Operations Specialists</b>			2,884	2,645	-239	-8.3	381	28.84	Asoc
<b>Business Operations Specialists</b>			5,855	5,878	23	0.4	1,473	NA	NA
<b>Business Operations Specialists</b>			3,841	3,278	-563	-14.7	821	23.27	Bech
<b>Business Operations Specialists</b>			112	115	3	2.7	18	21.43	Photo
<b>Business Operations Specialists</b>			270	278	8	3.0	62	25.81	Bech
<b>Business Operations Specialists</b>			27	30	3	11.1	10	33.34	Photo
<b>Business Operations Specialists</b>			217	221	4	1.8	35	23.54	Bech
<b>Business Operations Specialists</b>			319	244	-75	-23.5	46	34.51	Bech
<b>Business Operations Specialists</b>			72	75	3	4.2	10	26.27	Photo
<b>Business Operations Specialists</b>			96	97	1	1.0	23	NA	Asoc
<b>Business Operations Specialists</b>			223	238	15	6.7	48	32.26	Asoc
<b>Business Operations Specialists</b>			891	958	67	7.5	120	NA	Bech
<b>Business Operations Specialists</b>			342	349	7	2.0	43	24.45	Photo
<b>Business Operations Specialists</b>			7,296	7,288	-8	-0.1	1,441	NA	NA
<b>Business Operations Specialists</b>			5,328	6,751	1,423	26.9	1,242	NA	NA
<b>Business Operations Specialists</b>			886	1,029	143	16.1	231	25.73	Asoc
<b>Business Operations Specialists</b>			84	87	3	3.6	130	27.96	Photo
<b>Business Operations Specialists</b>			471	792	321	68.2	195	39.69	Asoc
<b>Business Operations Specialists</b>			183	187	4	2.2	34	28.16	Bech
<b>Business Operations Specialists</b>			222	266	44	19.8	96	27.90	Photo
<b>Business Operations Specialists</b>			290	384	94	32.4	62	32.15	Asoc

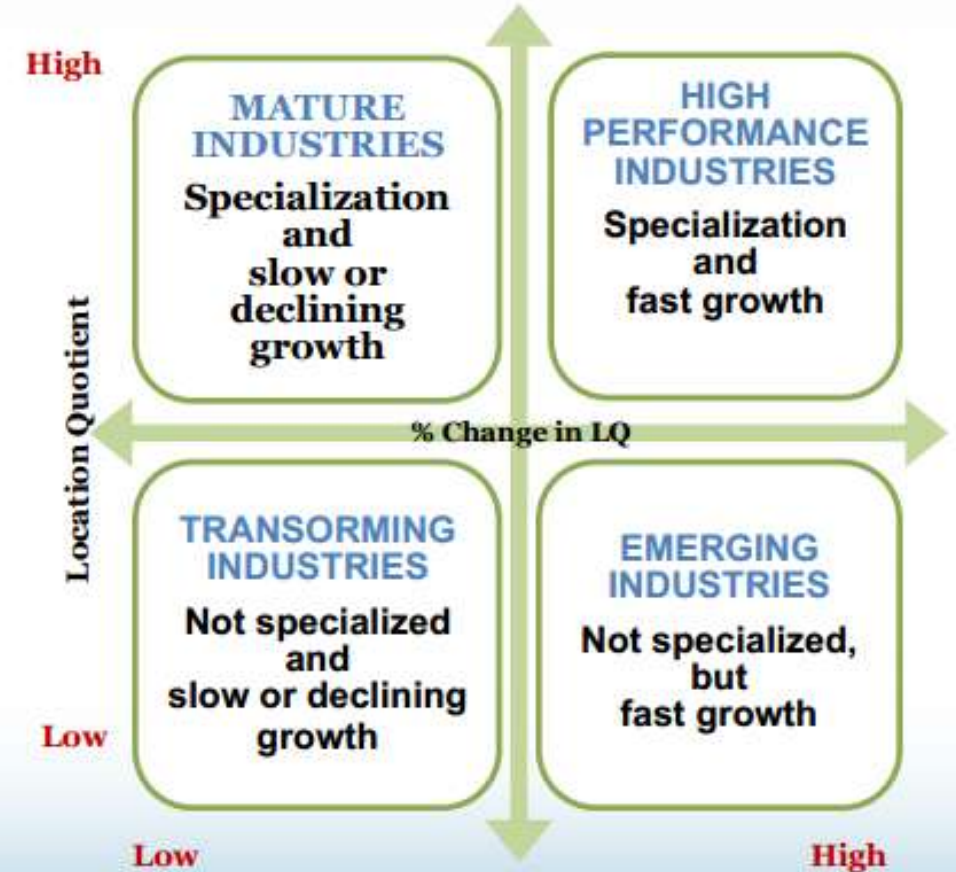
If you have questions about the projections program contact us at

# Workforce/Industry Clusters

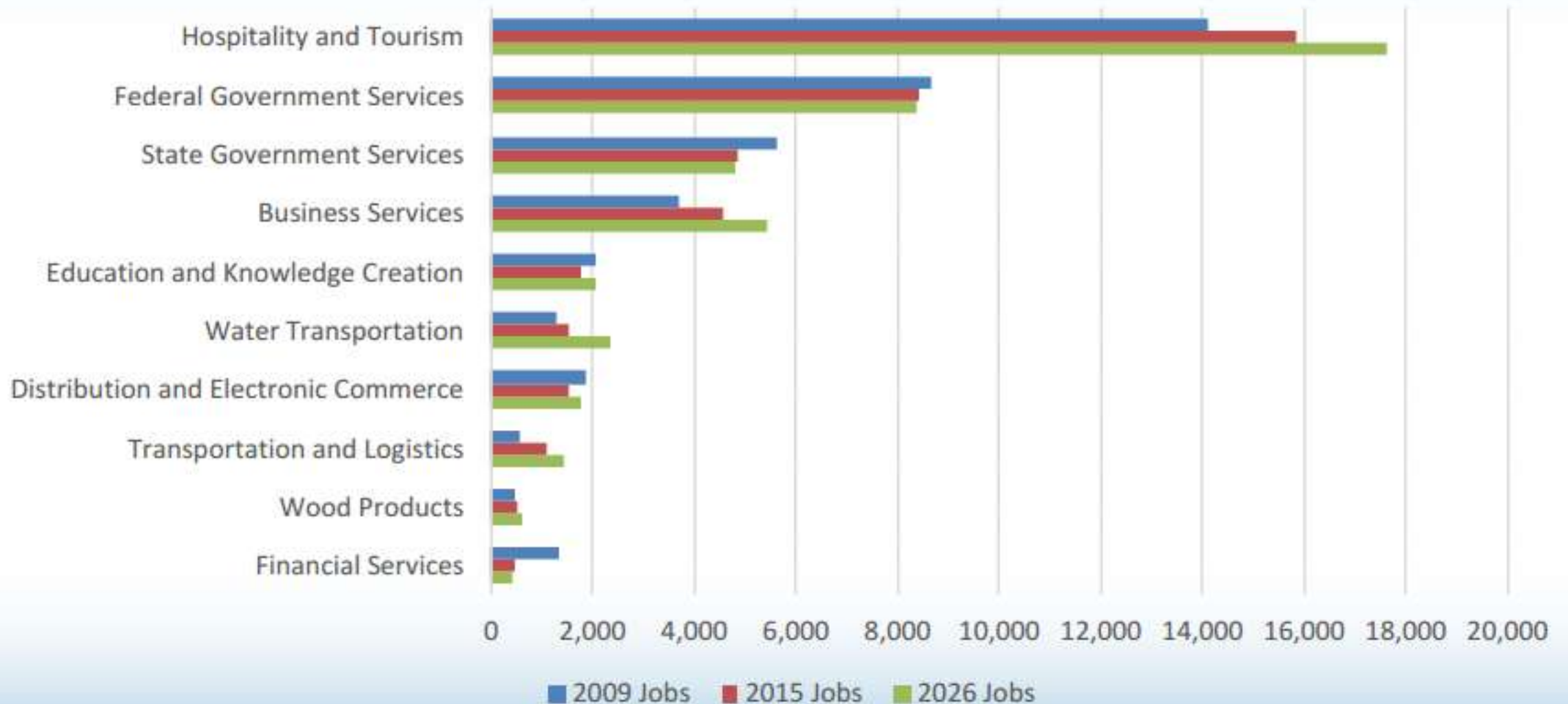
- Analysis of Cluster by local and regional location  
(Rick Harper: University of West Florida)



## Industry Cluster Concentration (Location Quotients)

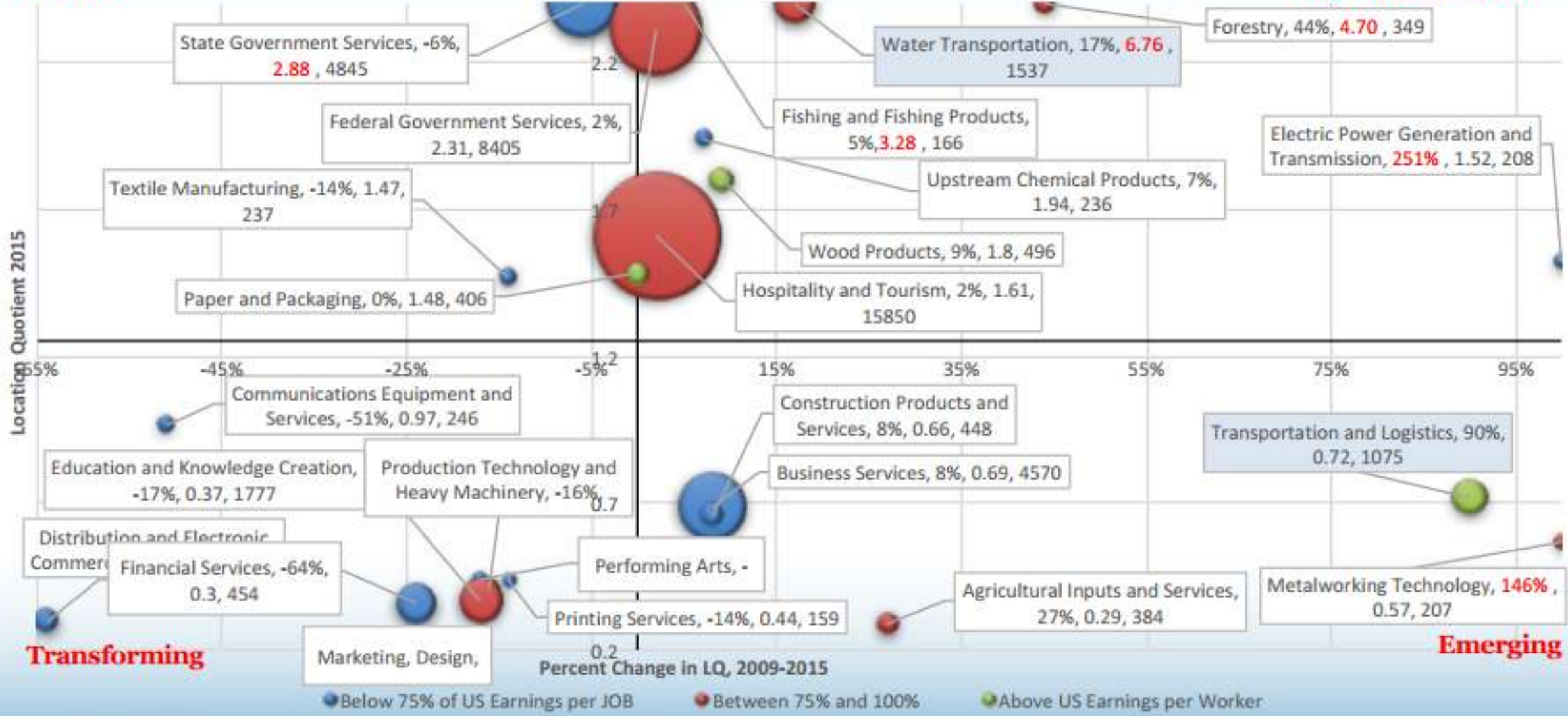


# Top Industry Clusters by Employment, Bay Area (2009, 2015, 2026)



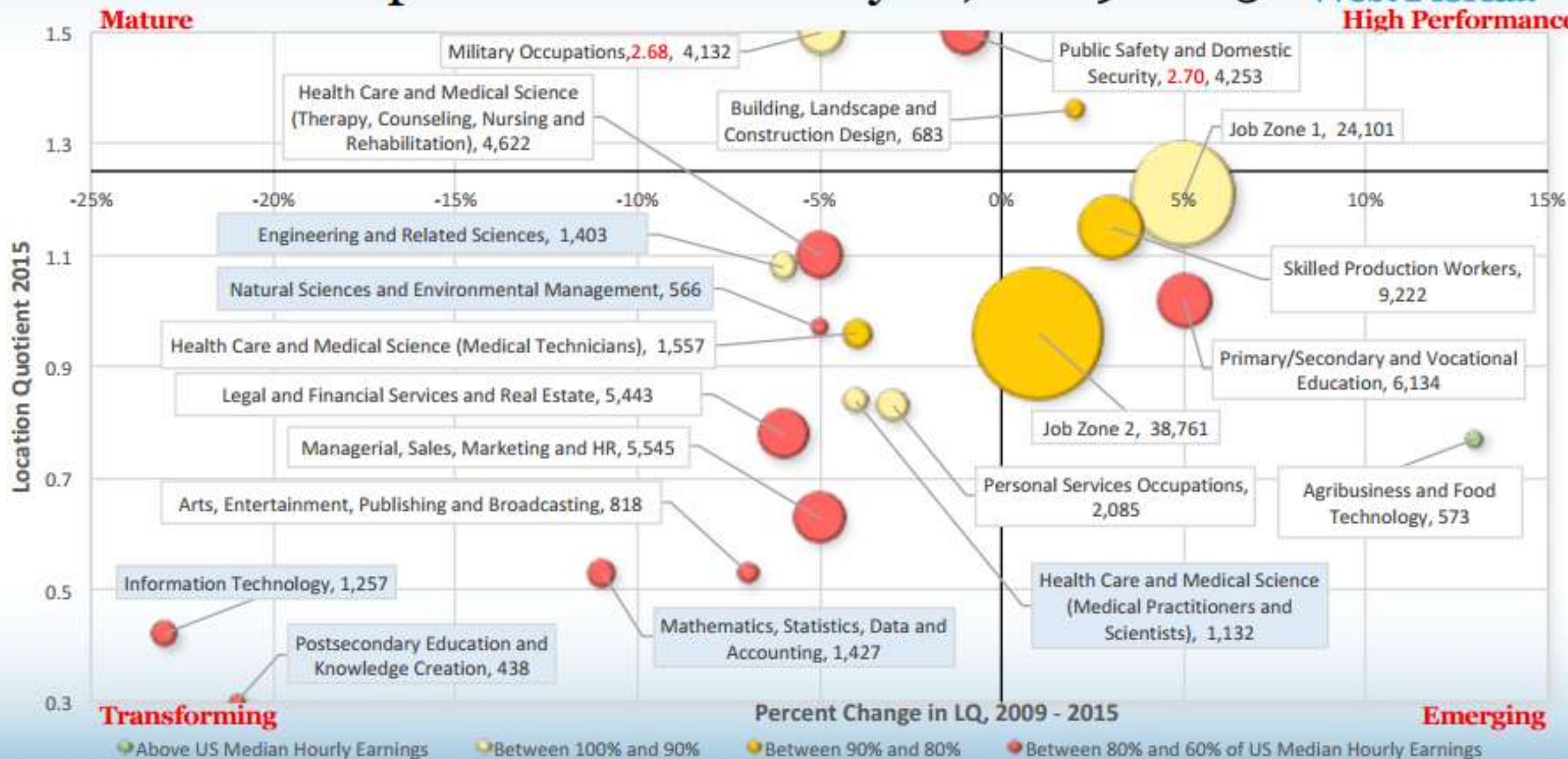
# Bay Area Traded Cluster Analysis, 2009-2015

**Mature**



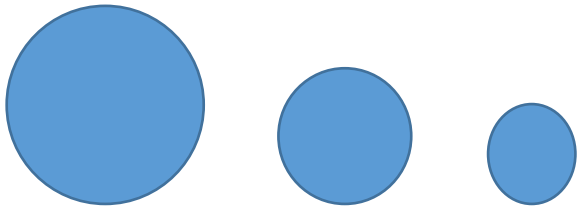
Note: Label includes cluster name, %change in LQ, LQ 2015, and Employment 2015, Data Source: EMSI 2016.2, industry cluster definitions by Michael Porter

# 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

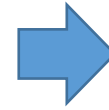
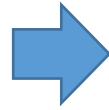
**HIGH PERFORMANCE INDUSTRIES**  
Specialization and  
Fast Growth

**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

Full List Of Programs

- Associate in Science (A.S.)
- Building Construction Management, A.S. (2160)
- Business Management, A.S. (2105)
- 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. (2135)
- 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	
<b>TERM 1</b>	<b>Courses</b>	<b>By 15 Completed Credit Hours</b>	
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	
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>	<b>2.0 or higher TCC GPA &amp; Cumulative GPA</b>	
<b>COMPLETED HOURS</b>	<b>7.5 HOURS</b>		
<b>TERM 2</b>	<b>Courses</b>	<b>By 30 Completed Credit Hours</b>	
Science State Core Course	*	Receive AutoDesk Auto CAD certification	
Program Requirement Course	**BCN2241 (Spring only)	Receive IC <sup>3</sup> certification	
Program Requirement Course	**BCN2230 (Spring only)	Visit Career Center	
Program Requirement Course	CGS1060	<b>2.0 or higher TCC GPA &amp; Cumulative GPA</b>	
Program Requirement Course	**ETD1320		
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>		
<b>COMPLETED HOURS</b>	<b>30 HOURS</b>		
<b>TERM 3</b>	<b>Courses</b>	<b>By 45 Completed Credit Hours</b>	
Humanities State Core Course	*	Graduation Check Workshop	
Program Requirement Course	BCN1040	Meet with Career Placement Coordinator in TCC Career Center	
Program Requirement Course	**BCN1001	<b>2.0 or higher TCC GPA &amp; Cumulative GPA</b>	
Program Requirement Course	BCN2704 (Fall only)		
Program Requirement Course	SUR2100C (Fall only)		
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>		
<b>COMPLETED HOURS</b>	<b>45 HOURS</b>		
<b>TERM 4</b>	<b>Courses</b>	<b>LAST SEMESTER</b>	
Program Requirement Course	ETI1701	*** Apply for Graduation!***	
Program Requirement Course	BCN2405	<b>2.0 or higher TCC GPA &amp; Cumulative GPA</b>	
Program Requirement Course	MAN2021 or IDS2941	<b>25% credit hours earned at TCC</b>	
Social Science State Core Course	*		
Program Requirement Course	BCT2770 (Spring only)		
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>		
<b>COMPLETED HOURS</b>	<b>60 HOURS TO GRADUATE</b>		

**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

Florida Department of Education  
Student Performance Standards  
2017 – 2018

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

02.01	Explain current manufacturing processes.
02.02	Describe the use of current manufacturing machines, operating systems and mechanisms.
02.03	Estimate manpower needs and skills needed in assembly operations.
02.04	Describe the factors considered for tool design, maintenance, procurement and handling.
02.05	Demonstrate knowledge of gages, gage and fixtures.
02.06	Analyze process changes for impact on product.
02.07	Identify principles and practice of production timing.
02.08	Identify effect of time and motion on productivity.
02.09	Identify effect of production changes on productivity.
02.10	Demonstrate knowledge of raw materials properties and requirements.
02.11	Follow engineering specifications and requirements in equipment setup.
02.12	Explain the importance of tooling maintenance.
03.01	Demonstrate an understanding of computer aided design--the student will be able to:
03.01	Apply current industrial computer aided design practices.
03.02	Apply standard dimensioning and tolerance rules.
03.03	Input and export various file types.
03.04	Interpret technical drawings.
04.01	Demonstrate an understanding of electronics and electrics--the student will be able to:
04.01	Use appropriate electrical circuit drawing techniques.
04.02	Apply knowledge of AC/DC theory.
04.03	Solve circuit problems using appropriate units and notation.
04.04	Solve problems using Ohm's Law.
04.05	Solve problems using Watt's Law.
04.06	Solve problems involving series and parallel impedances in circuits.
04.07	Solve problems involving capacitance in circuits.
04.08	Solve problems involving inductance in circuits.
04.09	Solve AC problems involving peak value, instantaneous, average value and RMS values.
04.10	Demonstrate an understanding of fuses, relays, and environmental requirements--the student will be able to:
04.10	Interpret appropriate National Fire Protection Association (NFPA).
04.11	Follow appropriate safety procedures.
04.12	Follow applicable safety and environmental laws and regulations.
04.13	Maintain a clean and safe work environment.
04.14	Maintain personal protection equipment.
04.15	Report unsafe conditions and practices.
04.16	Locate emergency equipment, exits and alarms.
04.17	Comply with established safety practices.
04.18	Explain appropriate fire extinguishing procedures.
04.19	Explain when a machine or a process should be stopped or investigated on unsafe condition.
04.20	Demonstrate knowledge of regulatory agency fines and requirements for corrective actions.
04.21	Demonstrate knowledge of government and company procedures, rules and regulations concerning student investigations.
04.22	Use and evaluate information resources such as OSHA, OSHA 3090, OSHA 1000.
04.23	Describe safe handling, marking, storing, and transportation of hazardous materials.

## 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
+EET1320, AutoCAD		3
+EET1101, Industrial Safety		3
+EET1110, Intro to Quality Assurance		3
+EET1411, Manufacturing Processes I		3
+EET2001C, 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.

+EET2090C, AC/DC Circuits	4
+EET1112C, Digital Circuits	4
+EET1112C, Industrial Electronics	4
+EET2542C, 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; +EET2240C, LabVIEW Instrumentation; +ETS2021C, Motors & Motion Control

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

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COURSE RECOMMENDATIONS ARE BASED ON GENERAL COURSE REQUIREMENTS.

SAMPLE FULLTIME SCHEDULE		MANDATORY HOURLY REQUIREMENT
<b>TERM 1</b>	<b>Courses</b>	<b>By 15 Completed Credit Hours</b>
Communications State Core Course	ENCL101	ENCL101
Mathematics State Core Course	**MAC1100	MACT105
Program Requirement Course	**BCT2705 (Fall only)	Attend First Semester Advising Workshop
Program Requirement Course	EGS1003	Meet with an Advisor
Program Requirement Course	**EGM1111C	Declare a Meta-Major
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>	2.0 or higher TCC GPA & Cumulative GPA
<b>COMPLETED HOURS</b>	<b>15 HOURS</b>	
<b>TERM 2</b>	<b>Courses</b>	<b>By 30 Completed Credit Hours</b>
Science State Core Course	*	Receive AutoDesk AutoCAD certification
Program Requirement Course	**BCH2241 (Spring only)	Receive IC <sup>3</sup> certification
Program Requirement Course	**BCH2230 (Spring only)	Visit Career Center
Program Requirement Course	CGS1060	2.0 or higher TCC GPA & Cumulative GPA
Program Requirement Course	**ESD1320	
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>	
<b>COMPLETED HOURS</b>	<b>30 HOURS</b>	
<b>TERM 3</b>	<b>Courses</b>	<b>By 45 Completed Credit Hours</b>
Humanities State Core Course	*	Graduation Check Workshop
Program Requirement Course	BCH1040	Meet with Career Placement Coordinator in TCC Career Center
Program Requirement Course	**BCH1001	2.0 or higher TCC GPA & Cumulative GPA
Program Requirement Course	BCH2704 (Fall only)	
Program Requirement Course	SUR2100C (Fall only)	
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>	
<b>COMPLETED HOURS</b>	<b>45 HOURS</b>	
<b>TERM 4</b>	<b>Courses</b>	<b>LAST SEMESTER</b>
Program Requirement Course	ETI1701	*** Apply for Graduation***
Program Requirement Course	BCH2405	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)	
<b>TOTAL SEMESTER HOURS</b>	<b>15 HOURS</b>	
<b>COMPLETED HOURS</b>	<b>60 HOURS TO GRADUATE!</b>	

\*\*\*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



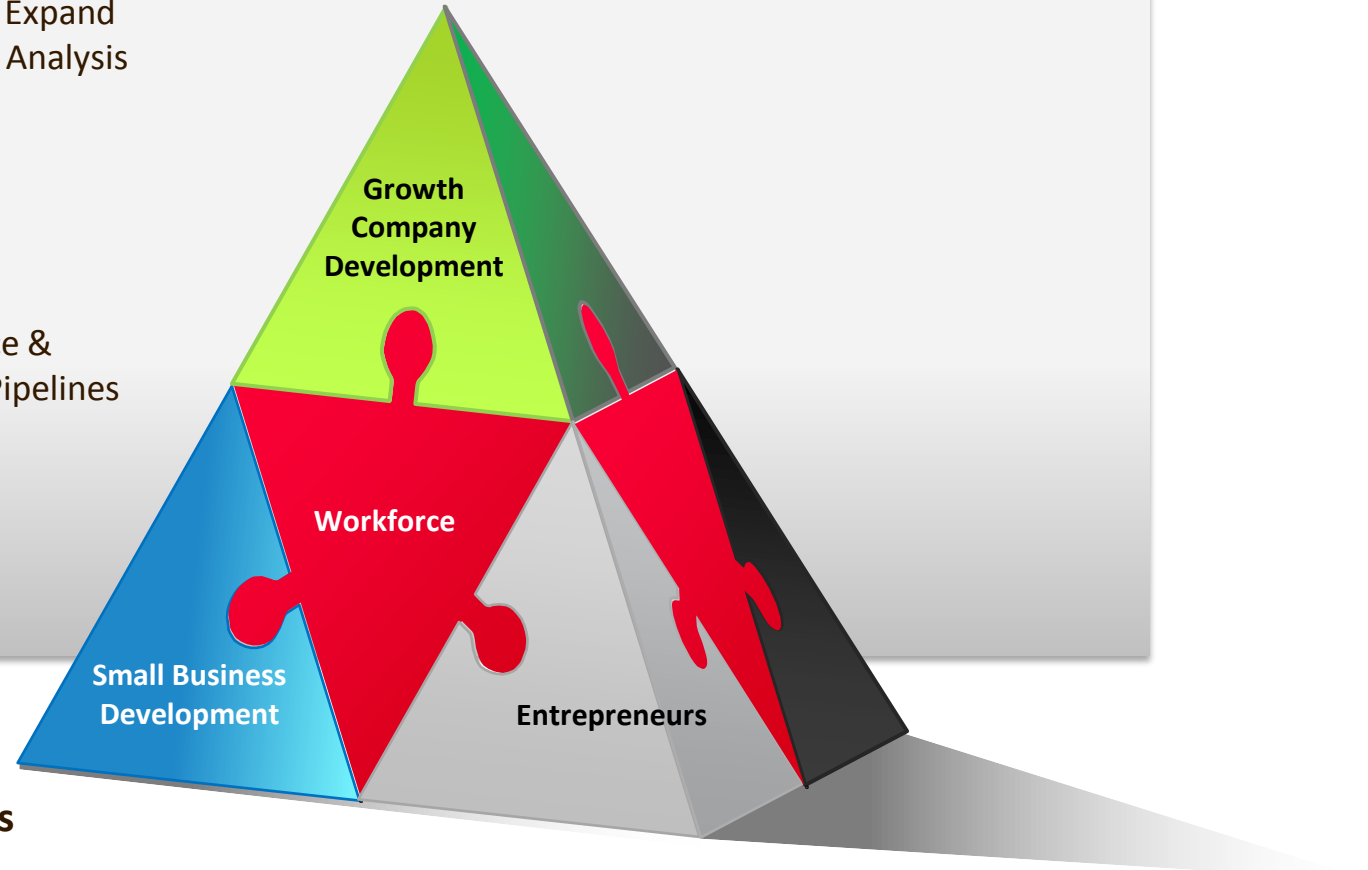
## Small Business Development

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.*

### Workforce Talent



Industry Certifications  
Customized Training  
Boot Camps  
Apprenticeships  
Career Academies

### Community Entrepreneurial Ecosystem

Business

Industry

Education

Government

### Entrepreneurial Development



Business Development  
Entrepreneur Support  
Start-Up Weekends  
Fab Labs  
Entrep. Institutes



LINKS:

CCAP Modules and Readings:

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

Florida College System reports:

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