

Career and Technical Education Programs of Study (CTE-POS)

Brevard Public Schools

BPS Demographics

- Florida's Space Coast
- 70 miles long, 30 miles wide
- 16 comprehensive high schools
- 72,000 students, K – 12

BCC Demographics

- Five campuses
- Degrees: AA, AS, AAS, ATD, CCC, and PSAV
- Over 25,000 students
- A 2+2 articulation to a State University Baccalaureate.

Brevard Public Schools Programs of Study

- Tools to plan rigorous and relevant high school courses
- Multi-year sequence of courses
- Industry-recognized credentials
- Postsecondary opportunities

Brevard's Initiatives

- Secondary Schools of National Prominence
 - Rigorous Course Requirements
- Brevard Public Schools Strategic Plan
- Carl D. Perkins Vocational and Technical Education Improvement Act of 2006

Articulated Acceleration Mechanisms

- Dual Enrollment (dual credit, early college)
 - Types – AA, AS, PSAV
 - Locations – BCC, HS, Virtual College
- AP, IB, AICE
- Advance Standing Credit
- Credit in Escrow

Process: Who Was Involved?

- Industry and Business
- Higher Education
- CTE Teachers
- Academic & CTE Resource Teachers
- Selected Guidance Counselors
- Secondary Curriculum Contacts
- Secondary Directors

Process: What Occurred?

- Over 40 Meetings
- August 2007-November 2007
- Decisions Concerning Fourth Year Academic Classes
- Electives

Career Cluster: Architecture and Construction	Major area of Interest: Industrial - Architectural Drafting
Career Cluster Pathway: Design/Pre-Construction	CTE Program: Drafting Technologies



16 REQUIRED CORE CREDITS					10 ADDITIONAL CREDITS	
ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	1/2 credit Career Research & Decision Making 1 HOPE (Health Opportunities through Physical Education) 1 Performing Fine Arts (*Signifies CTE course meets graduation requirements) 7.5 Electives, including CTE sequential Program of Study and recommended electives		
4 credits	4 credits	4 credits, 2 w/ lab	4 credits			

[Approved Dual Enrollment \(DE\) courses for qualified students may be used to satisfy high school graduation or Bright Futures Gold Seal Vocational Scholars course requirements.](#)

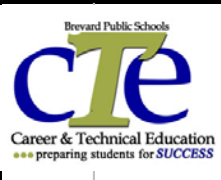
HIGH SCHOOL

9	English Honors 1	Geometry Honors	Biology 1 Honors or Integrated Science 1 Honors	World History Honors	Career Research & Decision Making (.5cdt) Elective (Ethics .5cdt)	*Drafting 1	Elective (Foreign)
10	English Honors 2	Algebra 2 Honors	Chemistry 1 Honors or Integrated Science 2 Honors	American History Honors	HOPE	*Drafting 2	Elective (Foreign)
11	AP English Language & Comp or English Honors 3	Pre Calc or Advanced Math Topics	Physics 1 Honors or Integrated Science 3 Honors	American Government Honors/ Economics Honors	Elective (Art/3D Comprehensive)	*Drafting 3	Elective (Comp College & Ca)
12	AP English Lit & Comp or DE English Comm 1 ENC 1101/ DE Technical Writing ENC 2210	BCC: Dual Enrollment ENC 1101 (English Communications 1) (1 HS credit or 3 college credits) and ENC 2210 Technical Writing is a suggested option for qualified students who are seeking an AS, AA, or BS/BA degree.		AP Psychology or DE Sociology SYG 2000 / DE Psychology PSY 2012 or Sociology/ Psychology 1	Elective (Speech or DE Speech SPC 2608/ DE Art History ARH 1051)	Elective (DE Civil Drafting ETDC 1540 / DE Advanced AutoCAD ETDC 2351)	Elective (Inte)

Brevard Public Schools Career & Technical Education (CTE) Program of Study

Option 2

Career Cluster: Architecture and Construction	Major area of Interest: Industrial - Architectural Drafting
Career Cluster Pathway: Design/Pre-Construction	CTE Program: Drafting



16 REQUIRED CORE CREDITS				10 ADDITIONAL CREDITS			
ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	1/2 credit Career Research & Decision Making 1 HOPE (Health Opportunities through Physical Education) 1 Fine Arts 7.5 Electives, Including CTE sequential Program of Study and recommended electives			
4 credits	4 credits	4 credits, 2 w/ lab	4 credits				

Approved Dual Enrollment (DE) courses for qualified students may be used to satisfy high school graduation or Bright Futures Gold Seal Vocational Scholars course requirements.

HIGH SCHOOL	9	English Honors 1	Algebra 1	Biology 1 Honors or Integrated Science 1 Honors	World History Honors	Career Research & Decision Making (.5cdt)/Elective Ethics (.5cdt)	Drafting 1	Elective (Foreign Language)
	10	English Honors 2	Geometry	Chemistry 1 Honors or Integrated Science 2 Honors	American History Honors	HOPE	Drafting 2	Elective (Foreign Language)
	11	AP English Lang & Comp or English Honors 3	Algebra 2	Physics 1 Honors or Integrated Science 3 Honors	American Government Honors/ Economics Honors	Fine Arts (Art/ 3D Comprehensive 1)	Drafting 3	Elective (Computing for College & Careers)
	12	AP English Lit & Comp or English Honors 4	Advanced Math Topics, PreCalc, or AP Statistics	AP Science or Integrated Science 4 Honors	AP Psychology or Sociology / Psychology 1	Elective (Speech)	DE Civil Drafting ETDC 1540 /DE Advanced AutoCAD ETDC 2351)	Elective (Internship)


Secondary career and technical education programs may lead to industry recognized certificates, occupational opportunities or postsecondary education options. Based on the Career Cluster of interest and identified CTE program, the following postsecondary options are available. The official college or university catalog must be used to determine course requirements in the major.

POSTSECONDARY	Information regarding high school to college and career transition can be accessed from FACTS.org							
	BREVARD COMMUNITY COLLEGE						UNIVERSITY PROGRAM(S) Bachelors Degree (four-year)	
	*Denotes certificates or degrees that may be available at other colleges but not at BCC.							
	AutoCAD Foundatons CCC			Drafting and Design Technology AS			*Civil Engineering BS	
	Drafting CCC			Interior Design Technology AS			*Mechanical Engineering BS	
			*Architectural Design and Construction Technology			*Landscape Architecture BS		
			*Associate in Arts (AA) degrees are offered at all Florida Community Colleges and allow students to move on to complete a four-year degree.			*Architecture BS		
						*Building Construction (Management) BS		

CAREER	SAMPLE CAREER SPECIALTIES							
	Architectural Drafter			Architectural detailer			Civil Enginner, Mechanical Engineer, Landscape Architect, Architect, Construction Manager	
Drafting Assistant								

***Industry Certifications (Students):**

Secondary:			
Postsecondary:			

 Career & Technical Education ...preparing students for SUCCESS	ENGLISH	MATH	SCIENCE	SOCIAL STUDIES	1/2 credit Career Research & Decision Making 1 HOPE (Health Opportunities through Physical Education) 1 Fine Arts 7.5 Electives, Including CTE sequential Program of Study and recommended electives
	4 credits	4 credits	4 credits, 2 w/ lab	4 credits	

[Approved Dual Enrollment \(DE\) courses for qualified students may be used to satisfy high school graduation or Bright Futures Gold Seal Vocational Scholars course requirements.](#)

HIGH SCHOOL	9	English Honors 1	Algebra 1	Biology 1 Honors or Integrated Science 1 Honors	World History Honors	Career Research & Decision Making (.5cdt)/Elective Ethics (.5cdt)	Drafting 1	Elective (Foreign Language)
	10	English Honors 2	Geometry	Chemistry Integrated Honors				
	11	AP English Lang & Comp or English Honors 3	Algebra 2	Physics 1 Integrated Honors				
	12	AP English Lit & Comp or English Honors 4	Advanced Math Topics, PreCalc, or AP Statistics	AP Sci Integrated Honors				

[BRIGHT FUTURES GOLD SEAL VOCATIONAL SCHOLARS COURSE REQUIREMENTS](#)

POSTSECONDARY	Secondary career and technical education programs may lead to the Career Cluster of interest and identified CTE program, the following determine course requirements in the major.	
	Information regarding high school course requirements	
	BREVARD COMMUNITY COLLEGE	
	*Denotes certificates or degrees that may be available	
	AutoCAD Foundations CCC	Drafting and Design
Drafting CCC	Interior Design	
	*Architectural	
	Associates	
	Colleges and Universities	

CAREER	Architectural Drafter	Architectural
	Drafting Assistant	


*Industry Certifications (Students):			
Secondary:			
Postsecondary:			

*Drafting 1
*Drafting 2
*Drafting 3

BCC: Tech Prep/Advance Standing Credit agreement course. Completion of Drafting or Drafting/Illustrative Design Tech 1, 2 & 3 w/ "B" or higher can lead to BCC credit in ETDC 2320 AutoCAD Fundamentals, ETDC 2355 AutoCAD 3D & TARC 1120 Architectural Drafting.

Elective (DE Civil Drafting ETDC 1540 /DE Advanced AutoCAD ETDC 2351)

Elective (Internship)

Career Cluster: Architecture and Construction				Major area of Interest: Industrial - Architectural Drafting			
Career Cluster Pathway: Design/Pre-Construction				CTE Program: Drafting			
	16 REQUIRED CORE CREDITS				10 ADDITIONAL CREDITS		
	ENGLISH 4 credits	MATH 4 credits	SCIENCE 4 credits, 2 w/ lab	SOCIAL STUDIES 4 credits	1/2 credit Career Research & Decision Making 1 HOPE (Health Opportunities through Physical Education) 1 Fine Arts 7.5 Electives, Including CTE sequential Program of Study and recommended electives		

[Approved Dual Enrollment \(DE\) courses for qualified students may be used to satisfy high school graduation or Bright Futures Gold Seal Vocational Scholars course requirements.](#)

HIGH SCHOOL	9	English 1	Applied Math 1	Biology 1 or Intergrated Science1	World History	Career Research & Decision Making (.5cdt)/Elective Ethics (.5cdt)	Drafting 1	Elective (Intensive Reading)
	10	English 2	Applied Math 2	Chemistry 1 or Intergrated Science 2	American History	HOPE	Drafting 2	Elective (Intensive Reading)
	11	English 3	Informal Geometry or Geometry 1	Physics 1 or Intergrated Science 3	American Government/ Economics	Elective (Computing for College & Careers)	Drafting 3	Elective (Intensive Reading)
	12	English 4	Algebra 2	Integrated Science 4	Sociology / Psychology 1	Fine Art (Art3D/Comprehensive 1)	Drafting 4	Elective (Intensive Reading)

Secondary career and technical education programs may lead to industry recognized certificates, occupational opportunities or postsecondary education options. Based on the Career Cluster of interest and identified CTE program, the following postsecondary options are available. The official college or university catalog must be used to determine course requirements in the major.

POSTSECONDARY	Information regarding high school to college and career transition can be accessed from FACTS.org							
	<u>BREVARD COMMUNITY COLLEGE</u>						UNIVERSITY PROGRAM(S)	
	*Denotes certificates or degres that may be available at other colleges but not at BCC.							
	AutoCAD Foundatons CCC			Drafting and Design Technology AS			*Civil Engineering BS	
	Drafting CCC			Interior Design Technology AS			*Mechanical Engineering BS	
				*Architectural Design and Construction Technology			*Landscape Architecture BS	
			Associate in Arts (AA) degrees are offered at all Florida Community Colleges and allow students to move on to complete a four-year degree.			*Architecture BS		
						*Building Construction (Management) BS		

CAREER	SAMPLE CAREER SPECIALTIES							
	Architectural Drafter Drafting Assistant			Architectural detailer			Civil Engineer, Mechanical Engineer, Landscape Architect, Architect, Construction Manager	

***Industry Certifications (Students):**

Secondary:

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Postsecondary:

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Career & Technical Education

Programs of Study

[Staff & Departments](#)

[CTE Home](#)

[Accelerated Programs](#)

[Introduction to POS](#)

[Calendar/ Events](#)

The files below open in Microsoft Excel. If you do not have Excel, download the Excel Viewer [here](#).

[Career Academies](#)

Click on the tab at the bottom of each program of study excel spreadsheet to select different options.

[Communication](#)

(Enlarge spreadsheet to full size to see tabs)

[CTE-CHOICE](#)

[Accounting Operations](#)

[CTE Programs](#)

[Air Conditioning, Refrigeration and Heating](#)

[CTE Programs of Study](#)

[Auto Collision, Repair and Refinishing](#)

[Forms](#)

[Automotive Service Technology](#)

[Industry Certifications](#)

[Business Supervision and Management](#)

[Links](#)

[Communications Technology](#)

<http://ctebrevard.com>

Drafting and Design Technology Program

World of Work in the Field of Drafting and Design Technology

Drafters prepare technical drawings and plans used by production and construction workers to build everything from manufactured products such as toys, industrial machinery and spacecraft to structures such as houses, office buildings, and gas pipelines. Drafters' drawings provide visual guidelines, show the technical details of the products and structures, and specify dimensions, materials, and procedures.

Typical tasks may include preparing plans and detailed drawings from rough or detailed sketches and notes for engineering or manufacturing purposes and using computer-assisted drafting (CADD) equipment and software.

Nearly all engineering, design, and manufacturing firms are potential employers. More than one-third of all drafters work in engineering and architectural services, one-third work in manufacturing, and the remainder work in construction and utilities.

For more information about the nature of work and the national job outlook for Drafting and Design, go to the US Department of Labor's Occupational Outlook Handbook <http://www.bls.gov/oco/>.

Career information in the area of Architecture & Construction can be found at <http://www.careerclusters.org>.

Earn a Degree and/or a College Credit Certificate!

- Associate in Science Degree in *Drafting and Design Technology (62 credits)*

JUMPSTART your career options with a Certificate (15 to 24 credits)

- *AutoCAD Foundations CCC*
- *Drafting CCC*

Students who succeed in this field...

- ...are detail oriented
- ...have good visual aptitude
- ...have good communication and interpersonal skills

Career Options: Drafting and Design Technician, CADD Operator/Specialist, Drafting Designer, CADD Drafting Technician/Specialist, Mechanical Engineering Assistant, Mechanical Drafter, Tooling Drafter, Civil Drafter*, Electrical Drafter, and Architectural Drafter*

Estimated Salary Range:
\$27,000 to \$52,000 per year

**Indicates Occupations on Brevard County's Regional Targeted Occupations List (TOL)*

Getting Started...

Apply to Brevard Community College at www.brevardcc.edu.

If you are already enrolled in BCC but wish to change your major to this program, be sure to complete a "Major Change" form. Forms are available in the Admissions office.

No special application to the program is required. Most Drafting and Design courses are offered on the BCC Melbourne or Cocoa Campus.

Visit a BCC Student Advisor for additional program information.

Contact Information:

Chris Broomfield – 321.433.5671 or e-mail broomfieldc@brevardcc.edu

Brevard Community College Drafting and Design Technology (DRAS) A.S. Degree (62 credit hours)

Recommended Course Sequencing

Foundation Courses	Semester 1 Fall	ETDC 2320 AutoCAD Fundamentals (TP/ASC Option)	ETDC 1540 Civil Drafting	CGS 2100 Microcomputer Applications	MAT 1033 or higher (requires minimum placement test score or successful completion of appropriate preparatory courses)
		4 credit hours	4 credit hours	3 credit hours	3 credit hours
Foundation Courses	Semester 2 Spring	ETDC 2355 AutoCAD 3D (TP/ASC Option)	ETDC 2340 Advanced AutoCAD	TARC 1120 Architectural Drafting (TP/ASC Option)	ENC 1101 Communications 1 (requires minimum placement test score or successful completion of appropriate preparatory courses)
		4 credit hours	4 credit hours	4 credit hours	3 credit hours
Intermediate and Advanced Courses	Semester 3 Summer	Humanities (requires minimum placement test score or successful completion of appropriate preparatory courses)	SPC 2608 Speech (formerly SPC 2600)		
		3 credit hours	3 credit hours		
	Semester 4 Fall	ETDC 2357 Parametric Modeling	ETDC 2545 Advanced Civil Drafting	TARC 2122 Advanced Architectural Drafting	Support Course Elective (see below)
		4 credit hours	4 credit hours	4 credit hours	3 credit hours
	Semester 5 Spring	Technical Elective (listed below)	Technical Elective (listed below)	Technical Elective (listed below)	Social/Behavioral Science (requires minimum placement test score or successful completion of appropriate preparatory courses)
	3 or 4 credit hours	3 or 4 credit hours	3 or 4 credit hours	3 credit hours	

Degree and Certificate Requirements: It is the responsibility of the student to meet the established degree requirements for the degree or certificate being sought at Brevard Community College. Specific requirements (minimum grades, prerequisites, etc.) are indicated in the 2009-2010 College Catalog.

Courses shown in shaded boxes indicate courses that apply toward a College Credit Certificate.

Not all courses are offered every semester. Students are encouraged to consult an advisor and/or the program contact for planning.

Program Advising Notes:
Most courses are offered on the Melbourne campus.

Tech Prep/Advance Standing Credit (TP/ASC Option) may apply- Graduates of Brevard Public Schools' Career & Technical programs in Drafting or Drafting/Illustrative Design Technology may be eligible to receive specific technical college credit at no cost. For information and requirements, visit www.brevardcc.edu/careertech.

Support Course Electives		Technical Electives			
ENC 1102 Communications 2 (3 credit hours)	OST 2335 Business Communications (3 credit hours)	ETDC 1801 Pictorial Drafting (4 credit hours)	COP 1000 Principles of Programming (3 credit hours)	INC 2910 Kitchen and Bath Design 1 (3 credit hours)	GRAC 2156 Vector Graphics (3 credit hours)
ENC 2210 Technical Writing (3 credit hours)	SLS 1101 Success Strategies for College and Life (3 credit hours)	ETDC 2322 Pro-E Fundamentals (4 credit hours)	EET 1084 Introduction to Electronics (3 credit hours)	ETD 2941 Internship (3 credit hours)	CGS 1871 Multimedia Presentations (3 credit hours)

Jumpstart your career by earning a **College Credit Certificate (CCC)** in the Drafting and Design Technology program!

- Earn a certificate in as few as two semesters
- Use certificate courses to build toward completing the A.S. degree in Drafting and Design Technology
- CPT testing is not required for the following CCCs
- No General Education courses are needed for the CCCs

AutoCAD Foundations (AFCC) CCC (15 credit hours)			
Foundation Courses	ETDC 2320 AutoCAD Fundamentals (TP/ASC Option) (4 credit hours)	ETDC 1540 Civil Drafting (4 credit hours)	OR CGS 2100 Microcomputer Applications (3 credit hours)
Advanced Courses	ETDC 2355 AutoCAD 3D (TP/ASC Option) (4 credit hours)	ETDC 2340 Advanced AutoCAD (4 credit hours)	

Drafting (DACC) CCC (24 credit hours)		
Foundation Courses	ETDC 2320 AutoCAD Fundamentals (TP/ASC Option) (4 credit hours)	ETDC 1540 Civil Drafting (4 credit hours)
Intermediate Courses	ETDC 2355 AutoCAD 3D (TP/ASC Option) (4 credit hours)	TARC 1120 Architectural Drafting (TP/ASC Option) (4 credit hours)
Advanced Courses	ETDC 2340 Advanced AutoCAD (4 credit hours)	TARC 2122 Advanced Architectural Drafting (4 credit hours)

Professional Development Provided

- Guidance Counselors
- Curriculum Contact Meetings
- CTE Middle School Teachers
- BCC Advisors

Individualized Program of Study



- **Individualized and flexible**
- **Addresses student interests and strengths**
- **First developed by student, parent, and school counselor by the end of October of 7th grade year**
- **Reviewed and revised annually**

Individualized Program of Study Timeline

Grade	Meeting Time Frame	Outcome
7	June - October	IPS/Relationships
8	November - April	IPS/Relationships
9	May - December	IPS Review
10	January – April	Plan Results
11	March – June	ACT/Spring
12	May – December	College Bound/ Community College/CTE

Individualized Program of Study and the CTE-POS

- **Tool for counselors**
- **Cohesive sequence of relevant courses**
- **Do not use CTE-POS to track students**
- **Templates to guide student course selection**
- **Meet requirements for graduation AND prepare for university, college or career**

POS - A Work in Progress

- Revise annually
- New programs
- Update
- Industry certification changes

Brevard's goal: Every student will graduate from high school prepared to enter and be successful in the workplace, in further career education, and/or in postsecondary degree opportunities.

Presenter Contact Information

- Brevard Public Schools (321) 633-1000, x-380
- Margaret Lewis, Lewis.Margaret@brevardschools.org
- Janice Scholz, Scholz.Janice@brevardschools.org
- Paula Bewerse, Bewerse.Paula@brevardschools.org
- Heather Price, Price.Heather@brevardschools.org
- Cindy Ivey, iveyc@brevardcc.edu (321) 433-5771