

Career Cluster: Engineering and Technology Education/(STEM)  
 Career Cluster Pathway: Engineering and Technology

CTE Program: **Engineering Pathways (9400300)**

Industry Certifications: ADESK002,011,021,024 & FLENG001

**16 REQUIRED CREDITS**

**8 ELECTIVE CREDITS REQUIRED**

*Collier County  
Program of Study*

<b>ENGLISH</b> (4 credits)  AP- Adv. Placement DE- Dual Enrollment	<b>MATH</b> (4 credits)  AP- Adv. Placement DE- Dual Enrollment	<b>SCIENCE</b> (3 credits, 2 with lab)  AP- Adv. Placement DE- Dual Enrollment	<b>SOCIAL STUDIES</b> (3 credits)  AP- Adv. Placement DE- Dual Enrollment	<b>CAREER EDUCATION PROGRAM COURSES</b>  <b>Other Requirements:</b> Pass FCAT 2/PARC – Reading Level 3, pass Algebra I EOC, and 30% of EOC Exam for Biology, Algebra 2, Geometry, US History	<b>RECOMMENDED ELECTIVES</b> (State University Aligned)  (One virtual course is required)
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Dual enrollment and CTE courses satisfy graduation and Bright Futures Gold Seal Vocational Scholar requirements. Agriscience Foundations and Aerospace Technology satisfy core science requirements. State Approved industry certifications lead to college credit and may substitute for up to two high school credits of math and one credit of science. Visit [www.flvs.org](http://www.flvs.org) and a counselor to develop your schedule.

**HIGH SCHOOL**

<b>9</b>	English I or Honors (1)	Algebra 1 or Honors (1)	Earth & Space Science or Honors (1)	Elective (1)	HOPE (1)	Intro to Engineering Design-H (1) (Art Requirement)	Technical Design 1 (1) (Art Requirement)
<b>10</b>	English 2 or Honors (1)	Algebra I/Honors or Informal Geometry or Geometry/Honors (1)	Biology or Honors (1)	World History or Honors or AP (1)	Technical Design Technology 2 –H or Elective (1) (Art Requirement)	Digital Electronics-H (1) (Art Requirement)	Foreign Language 1* (1)
<b>Students encouraged to take the ACT, SAT or PERT during 11<sup>th</sup> grade. Scores on the FCAT, FACT 2.0 and EOCs' should determine college readiness</b>							
<b>11</b>	English 3 or Honors or DE or AP (1)	Geometry/H or Algebra 2/H or DE or AP (1)	Chemistry or Physical Science or Physics or DE or AP (1)	American History or Honors, DE or AP (1)	Technical Design 3 or Comp. Integrated Manftg. -H(1)	Principles of Engineering -H (1) (Art Requirement)	Foreign Language 2* (1)
<b>12</b>	English 4 or Honors or DE or AP (1)	Algebra 2/H or College Ready Math or DE or AP (1)	Physics or DE or AP (1)	Am Gov/Economics or Honors or DE or AP(1)	Engineering Design & Development-H (1)(Art Requirement)	Engineering Elective -H (Art Requirement)	FL Virtual Course (1)

**POSTSECONDARY**

Based on this Career Cluster and identified career and identified technical education program, the following postsecondary options are available

<b>TECHNICAL CENTER PROGRAM(S)</b>	<b>COMMUNITY COLLEGE PROGRAM(S)</b>	<b>UNIVERSITY PROGRAM(S)</b>
<p><u>LWTC or ITC</u>  <b>C100200 - Drafting (1500 hrs) - PSAV Certificate</b></p>	<ul style="list-style-type: none"> <li>-Architectural Design &amp; Construction Technology , <b>AS</b>, (66 Cr.) -<b>FSW</b></li> <li>-Drafting &amp; Design Technology, <b>AS /AAS</b>(12 cr.) (statewide)</li> <li>-Design &amp; Drafting, <b>AS/AAS</b> (60 cr.) - <b>Hodges University</b></li> <li>-Civil Engineering Technology, <b>AS /AAS</b> (63 cr.)- <b>FSW</b></li> <li>-Electronics Engineering , <b>AS /AAS</b> (68 cr.)</li> <li>-Biomedical Engineering Tech., <b>AS</b>,(61 cr.) <b>FL St. College</b></li> <li>-Engineering Tech., <b>AS</b> ( 60 cr.), <b>FL St. College</b></li> <li>-Computer Aided Drafting, <b>AS (72 cr.) Kaiser University</b></li> </ul>	<ul style="list-style-type: none"> <li>-Civil Engineering, <b>BSCS</b> (128 cr.) <b>FGCU</b></li> <li>-Environmental Engineering, <b>BSEnvS</b> (128 cr.) <b>FGCU</b></li> <li>-Bioengineering, <b>BS</b> (129 cr.) <b>FGCU</b></li> <li>-Information Systems Mgmt, <b>BS</b> including (48 cr.) of Design &amp; Drafting Track - <b>Hodges University</b></li> <li>-Technology Education Teacher, <b>BS</b>, (129 cr.) - <b>Statewide</b></li> <li>-Construction Engineering (128 cr.)-<b>UCF</b></li> <li>-Architecture, <b>MS</b> (51 Grad. Cr.)- <b>USF</b></li> <li>-Engineering Technology, <b>BSET w/Design</b> (128 cr.)-<b>UCF</b></li> <li>-Electrical Engineering, <b>BSEE (128)</b>- <b>UCF</b></li> </ul>

<b>ARTICULATIONS/ CREDIT</b>	<b>High School Students to PSAV Technical Center Program</b>	<b>Technical Center or High School to Community or State College</b>	<b>State and Community Colleges to Universities</b>
	(Hours awarded are based on competencies achieved)  <b>9400300 Engineering Pathways</b> 8600550 Introduction to Engineering Design 8600520 Principles of Engineering 8600530 Digital Electronics 8600560 Computer Integrated Manufacturing (OR) 8600590 Civil Engineering and Architecture 8600650 Engineering Design and Development <b>(TO)</b> <b>C100200 Drafting (1500 hours)</b> <b>Common OCPs</b> OCP A Blueprint Reader (150) OCP B Drafting Assistant (450)	<b>(HS) Rochester Institute of Technology (RIT)</b> Students will be awarded up to (12) credits in the Engineering Department upon completion of the criteria. <b>USF</b> Students will be awarded (1-4 cr.) in Engineering Department upon completion of the criteria:  <b>Statewide</b> (1)- <b>ADESK002 certification</b> = (3 cr.) toward AAS/AS in Drafting Design Tech. and Arch. Design & Const. Tech. (2) - <b>ADESK011 certification</b> = (3 cr.) toward Engineering Tech. (3) - <b>ADESK021 certification</b> = (3 cr.) toward Drafting Design Tech. (4) - <b>ADESK024 certification</b> = (3 cr.) toward Engineering Technology	<b>FL Southwestern State College to Hodges University:</b> -Interdisciplinary Studies, <b>BS</b> (62 cr.) -Computer Information Technology, <b>BS</b> (62 cr.) -College of Education: Drafting Teacher, <b>BS</b> , (62 cr.)  <b>Statewide Articulation:</b> - Drafting & Design Technology = <b>AS</b> to Technology Education Teacher , <b>BS</b> (63 hrs) toward degree (129 hrs)
<b>Based on the Career Cluster of interest and identified CTE program the following sample career specialties</b>			
<b>CAREERS</b>	<b>Technical Centers</b>	<b>Community Colleges</b>	<b>4 Year Colleges and Universities</b>
	Architectural and Civil Drafters Computer Aided Drafter (CAD) Drafting Assistant CNC Operator (DOL) Surveying and Mapping Technicians	(DOL) First-Line Supervisor of Production and Operating Workers ( <b>HSHW</b> ) (DOL) First-Line Supervisor of Construction and Extraction Workers ( <b>HSHW</b> ) (DOL) Construction and Building Inspectors ( <b>HSHW</b> ) Industrial Engineering Technician Manufacturing Technician Civil Engineering Technician Architectural and Civil Drafters (DOL) Construction Manager ( <b>HSHW</b> )	Product Design Engineer Industrial Engineer Structural Engineer Systems Design Engineer Architectural Engineer (DOL) Civil Engineer ( <b>HSHW</b> ) Construction Engineer
<b>INDUSTRY CERTIFICATIONS</b>			
<b>All certifications students have the opportunity to take while in this POS:</b> ADESK011 Autodesk Certified User- Autodesk Inventor ADESK002 Autodesk Certified User- AutoCAD ADESK021 Autodesk Certified Professional- Inventor ADESK024 Autodesk Certified Professional-AutoCAD FLENG001 Engineering Core Certification, FL Engineering Society			
<b>CAREER AND TECHNICAL STUDENT ASSOCIATION</b>			
Florida Technology Student Association (FL-TSA) and SkillsUSA			
<b>INTERNSHIP/WORK EXPERIENCE RECOMMENDATIONS</b>			
Work, intern, volunteer, shadow individuals in architectural offices, engineering offices, county planning offices, school facility and planning offices and manufacturing business. Join TSA. Refer to <a href="http://collierschools.com/careertech/internships.htm">http://collierschools.com/careertech/internships.htm</a> for district approved internship opportunities.			
****	Reviewed May 1, 2016 and updated annually. See your Counselor for the most recent plan as student schedules will vary based on the needs of the student. Find detailed graduation requirements at: <a href="http://www.fldoe.org/academics/graduation-requirements">http://www.fldoe.org/academics/graduation-requirements</a>		

**Engineering Pathways (HS) #9400300**