CTE PROGRAM OF STUDY: C-STEM Information and Communication Technology (ICT) Career Pathway

Industry Sector: Information and Communicaiton Technologies

Career Pathway: Software and Systems Development

Levels	Grade	CTE Courses	English Language Arts	Math	Social Science	Science	Other Required Courses or Recommended Electives		Dual and/or Concurrent Enrollment	Articulated Courses (College Credit for HS Classes)
Middle	7	Introduction to Computer Programming	English	Math 7 with Computing	World History / Geography	Life Sciences	Physical Education			
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRL Camp								
	8	Robotics and Video Production	English	Math 8 with Computing	US History / Geography	Life Sciences	Physical Education			
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRL Camp								
Secondary - HS Name	9	Computer Programming for Solving Applied Problems	English	Algebra I with Computing and Robotics IM1 with Computing and Robotics		Physical Science with Computing and Robotics	Physical Education			
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRL Camp								
	10	Computing with Robotics	English	Geometry with Computing and Robotics. IM2 with Computing and	World History	Biological Science	Physical Education			
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRLCamp, Robotics Club, Computer Science Club								
	11	AP Computer Science Principles	English	Algebra II with Computing and Robotics. IM3 with Computing and Robotics	US History		Foreign Language I or Visual & Performing Arts ★ (Districts may allow CTE to fulfill this)			
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRL Camp, Job Shadowing, Work Based Learning, Service Based Learning, Mentorships, Career Technology Student Organization (CTSOs), Maker Fair, Hacker Space. Seek industry certifications such as Microsoft, CompTIA, CIW, CISCO, etc. Add to digital portfolio.								
	12	Principles and Design of Cyber-Physical Systems		AP Statistics or Pre-Calculus (with Computing and Robotics)	Government(semester) Economics (semester)	Physics with Computing and Robotics			STAT120: Statistics ★	
		Recommended Activities: RoboPlay Video Competition, RoboPlay Challenge Competition, GIRLCamp, Job Shadowing, Work Based Learning, Service Based Learning, Mentorships, Career Technology Student Organization, Maker Fair, Hacker Space, Seek industry certifications such as Microsoft, CompTIA, CIW, CISCO, etc. Enroll at Community College. Add to digital portfolio.								

This template assumes students have completed high school exit exams and basic skills coursework. Local graduation requirements may vary.

Legend:

- ⓘ Course is recommended by industry experts
- # Course is articulated, see comments below
- ★ Course may be taken via concurrent or dual enrollment
- ⊙ Indicates a course that may satisfy multiple requirements

Post Secondary - College Name		CTE Courses	Additional and Optional Courses ……			General Education Requirements			Occupations Relating to this Pathway	
		Acct 110:Financial Acct Acct 120:Managerial Acct	...For completion of Local AS/AA Degree (total Units)	...For completion of Achievement Certificate (total units)	...For completion of Skills Certificate (total Units)	Area A English Language Communication & Critical Thinking (9 units)	Area B Scientific Study & Quantitative Reasoning with 1 lab (9 units)	Area C Arts & Humanities (9 units)	Careers requiring a high school diploma or equivalent	Careers requiring a BA / BS degree
	13	ECON121: Microeconomics				English composition	Mathematics ⊙	Arts	Customer Service Representative Computer Technician (with certifications) Networking Technician	Computer Info Systems Managers Computer Hardware Engineers Computer Programmers Business Systems Analysts Database Administrators Web Developer Applications Developer
		Intro to Programming (ITIS 190) and Intro to Database Management Systems (ITIS170)				Oral Communication	Physical Science	Humanities		
						Critical Thinking	Life Sciences	Arts or Humanities (recommended foreign language)	Careers requiring some post secondary	
	14	Select 1 from: Business Statistics(STAT120) or Finite Math(MATH130)				Area D Social Sciences (9units)	Area E Lifelong Learning & Self Development (3 units)	When course requirements are counted for credit in more than one area, i.e. double counted, students must complete additional transferrable units to result in a cummulative total of 60 units.	Computer Support Specialists Help Desk Specialists System Administrators Software and Hardware Salesperson Bookkeeper E Commerce Small Business Entrepreneur	Careers requiring a BA/BS + (beyond the scope of this template)
		Select 1 from: Business Information Systems (BUS140) or Computer Information Systems (ITIS120)				US History	Any course recommended in this area			Computer & Information Systems Manager Chief Information Officer Chief Technology Officer
						Political Science (American Government)				**For students interested in attending a UC Campus, be aware that courses included on the CSU GE pattern are not always consistent with IGETC GE Pattern for UC Admission**
						Microeconomics or Macroeconomics				
	15	Suggested Majors: Business, with a concentration in Management Information Systems, Business Information Systems							Careers requiring 2 year degree	
		Industry recognized certifications, Credentials, licenses, or apprenticeships related to this pathway: COMP TIA, Microsoft, CISCO, etc. as well college certificate or degree completion								
	16	Comments: • courses with this color are UC Davis C-STEM courses. One or more of C-STEM courses can be replaced by other equivalent or relevant courses. • Prerequisite requirements may vary by school and may alter the sequence of courses above. • This template is based upon requirements for CSU transfer pattern and assumes that all basic skills (remedial) coursework is completed. • Where there are course numbers identified, the course number references the CID course. Course content for these courses may be found at www.c-id.net/descriptors. Per Title 5, students may only receive credit for articulated high school work upon completion of a credit by exam mechanism that ensures that the objectives of the community college course have been met. Completion of an articulated course in high school does not guarantee receipt of credit at the community college.							Network Engineer Business Programmer Social Media/Marketing Specialist	