

## MEDIA & TECHNOLOGY: PROGRAMMING AND SOFTWARE MANAGEMENT PATHWAY –

This pathway focuses on using computer science, mathematics, and technology to design, develop, and manage software systems that solve real-world problems. It includes topics like programming languages, software design, data structures, algorithms, cybersecurity, project management, and the ethical and legal aspects of computing.

**CAREERS INCLUDE:** Software Developer / Software Engineer, Web Developer, Mobile App Developer, Game Developer, Systems Analyst, Database Administrator, Cybersecurity Analyst, IT Project Manager, DevOps Engineer, Cloud Solutions Architect, AI / Machine Learning Engineer, Data Scientist, Quality Assurance (QA) Tester / Engineer, UI/UX Designer, Network Administrator, IT Support Specialist, Product Manager, Computer Programmer, Software Consultant, Technology Entrepreneur

### SAMPLE PLAN OF STUDY\*

\*This course has a co/prerequisite. ‡This course is offered at CTEC. ¥This course counts as a STEM Elective

<p><b>FRESHMAN YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (1.0) Physical Education                  (1.0) Performing/Fine Arts Credit                  (2.0) Electives</p>	<p><b>SOPHOMORE YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (0.5) Health                  (0.5) Communications Credit                  (1.0) <b>AP Computer Science Principles</b> *‡¥                  (1.0) <b>Web Design</b> ‡¥                  (1.0) Electives</p>
<p><b>JUNIOR YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (1.0) Science                  (1.0) Social Studies                  (1.0) <b>AP Computer Science A</b> *‡¥                  (1.0) <b>Cybersecurity</b> *‡¥                  (2.0) Electives</p>	<p><b>SENIOR YEAR</b></p> <p>(1.0) English                  (1.0) Math (based on math course progression)                  (0.5) Social Studies                  (0.5) Financial Literacy                  (1.0) <b>WBL in Programming &amp; Software Development</b>                  (4.0) Electives</p>

#### BOLDED COURSES LEAD TO PATHWAY COMPLETION

**PATHWAY COURSES:** Pathway completion requires students to complete three (3) credits in the pathway, with at least two (2) of those credits being a combination of technical and application-level courses. Additionally, a student must earn one of the following: an industry-recognized certification (IRC), nine (9) + college hours aligned to the pathway, or complete a high-quality work-based learning experience - Entrepreneurial Experience (EntX), Client Connect Project (CCP), or Internship.

TECHNICAL LEVEL	APPLICATION LEVEL
Web Design ‡¥ AP Computer Science Principles *‡¥	AP Computer Science A *‡¥ Cybersecurity *‡¥ (offered every other year) WBL in Programming & Software Development (Client Connected Project or Internship) *‡

<p><b>Other Recommended Courses</b></p> <p>Graphic Design                  Animation                  Game Design                  Business Management                  Entrepreneurship                  Engineering Design                  Robotics</p>	<p><b>Opportunities for Pathway Completion:</b></p> <p>WBL in Programming &amp; Software Development – EntX, CCP, or Internship</p>	<p><b>Graduation Requirements:</b></p> <p>English – 4 credits                  Math - 4 credits                  Science – 3 credits                  Social Studies – 3.5 credits                  STEM Elective – 1 credit                  Fine Arts – 1 credit                  Communication – 0.5 credit                  Financial Literacy – 0.5 credit                  Physical Education/Health – 1.5 credits                  Postsecondary Assets – 2 required</p>
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\*This sample plan of study offers an example of what a student's individual plan of study in this pathway might look like. Please note that some courses may not be offered on an annual basis and participation in classes may be subject to space availability.