



Austin Independent School District – South Magnet Planning Committee

| Potential New South Magnet Program Proposal | |
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| Theme | Computer Science Magnet |
| Evidence of District Need | <p>Because of the lack of computer science (CS) certified teachers at Austin ISD and across state, AISD’s capacity to expand CS offerings is limited. The District has elected to partner with various agencies to offer students CS courses including OnRamps, a UT Austin dual enrollment program; Technology Education and Literacy in Schools, to help high schools start and grow a sustainable CS program and build CS teacher capacity by implementing a co-teaching model with a professional software engineer; Project Lead the Way, a Career and Technical Education program that develops programming expertise; and CS and Computer Programming courses.</p> <p>There is a demonstrated regional economic need for computer science professionals. Computer and mathematical science occupations in Austin generated the highest average salaries, at \$75,908, but took nearly 42 days to fill.¹ Additionally, a majority of STEM degrees in Central Texas by Central Texas HS graduates are in bio-sciences or engineering. The fewest are in computer science followed by mathematics. The production of STEM Bachelor’s degrees does not match demand in Central Texas.²</p> |
| Description | <p>The Computer Science Magnet program is designed to support students on the pathway to a career or post-secondary exploration in computer science (CS). This magnet program would support students’ skill development in problem solving, critical thinking, collaboration, and communication found in computer science, coding, game design, website development, and technology app development. Program goals would include demystifying aspects of computer science and increasing the number of female, Hispanics, and African American students pursuing careers in computer science.</p> <p>All entering freshman would take Advanced Placement (AP) CS Principles to provide students with an understanding of the various computer science components. AP Computer Science Principles would use the Thriving in our Digital World curriculum to incorporate project-based computer science tasks that helps students build their problem solving, critical thinking, and collaboration skills while exposing students to different CS paths such as game design, website development, technology app creation, and coding. After AP CS Principles, students would then select a specific computer science pathway. The path choices would include Coding, Web Design, App Development or Game Design, Robotics, Data/Science Management Information Systems, Systems Administration/Network Management, and Cybersecurity. After the</p> |

¹ <http://www.brookings.edu/research/interactives/2014/job-vacancies-and-stem-skills#/M12420>

² E3 Alliance. “High-Demand STEM Jobs Require Higher Education.” 2015. <http://e3alliance.org/wp-content/uploads/2015/04/STEM.pdf>



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| | <p>student chooses their path, the students would then take a series of courses aligned to that particular path.</p> |
| Enrollment Criteria | <p>Application open to all students</p> <p><u>Application and Enrollment Priorities</u></p> <ul style="list-style-type: none"> • Enrollment would be based on academic record (grades and standardized test scores), teacher recommendation letters, and an in-person test and essay requirement. • Spaces available would be awarded by lottery to students meeting minimum scoring criteria identified for academic success. • 75% of spaces are allocated to students from schools that are high poverty. |
| Facility Implications | <ul style="list-style-type: none"> • Classroom renovations; • Computer Science laboratory; • Digital technology laboratory; • Green technology science laboratory; and • Robotics laboratory. |
| Budget | <ul style="list-style-type: none"> • Curriculum/Program – Advanced Placement, Dual Credit; • Facility Improvements (see above); • Professional Development and Training – Advanced Placement, Computer Science; and • Technology – 1:1 student to device ratio; • Technology – Computer Laboratory Stations; and • Transportation. |
| Additional Resources | <ul style="list-style-type: none"> • Rackspace Open Cloud Academy: funded in part by the City of San Antonio (see first link below) and courses are offered at Northside ISD’s Holmes High School for the same certifications. - http://tpr.org/post/training-programs-working-fill-san-antonio-it-needs#stream/0; http://opencloudacademy.rackspace.com/ • Centennial High School, West Ada School District, Idaho - http://www.westada.org/Page/23588 • Madison Computer Science and Engineering Design Magnet, Los Angeles Unified School District - http://madison.lausd.net/ktpmagnet/ • Pathways Academy of Technology and Design, Hartford, Connecticut - http://www.pathwaystotechnology.com/page.cfm?p=1669 • Garfield Computer Science/Math Magnet HS, Los Angeles Unified School District - http://www.garfieldhs.org/apps/pages/index.jsp?type=d&uREC_ID=123998&pREC_ID=245771 |



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- Blair Magnet Science/Math/Computer Science Magnet, Montgomery Public Schools - <https://mbhs.edu/departments/magnet/about.php>
- Poolesville HS Science, Math, Computer Science Magnet, Montgomery Public Schools - <http://www.montgomeryschoolsmd.org/schools/poolesvillehs/magnet/smcs/>
- edX - <https://www.edx.org/high-school>
- Recruitment Strategies for AP Computer Science Principles - <https://advancesinap.collegeboard.org/stem/computer-science-principles/recruitment-strategies>

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