

***What courses do university STEM faculty  
say high school students should take to  
prepare to major in their fields?***

***Paul Cottle  
Department of Physics  
Florida State University***

***Dr. Phillips High School  
April 27, 2021***

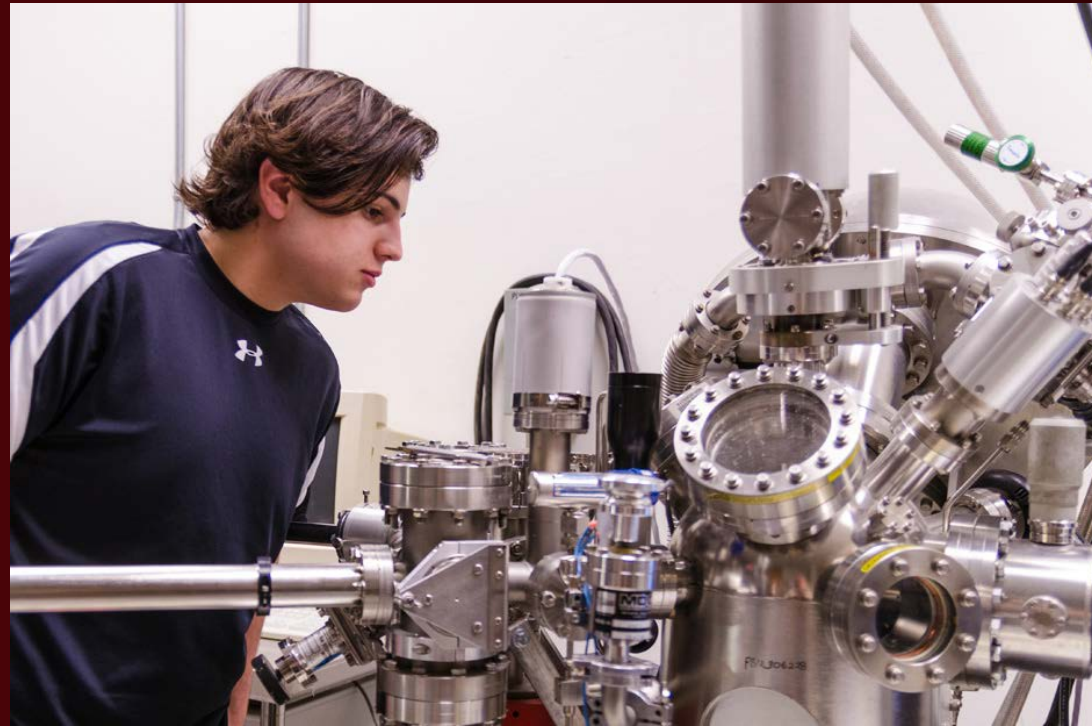


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# Engineering



“Most engineering schools require four years of math, including **Pre-Calculus**, although **Calculus or AP Calculus is strongly encouraged**. Engineering schools are also looking for at least three years of science, including **Physics and Chemistry.**”



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# Meteorology

“In high school, students should take earth sciences, physics, chemistry and mathematics through at least pre-calculus. Generally, students who have completed a course in calculus and/or a course in computer programming will have an advantage when starting their Meteorology and Atmospheric Science studies.”



PennState  
College of Earth  
and Mineral Sciences

Department of  
Meteorology and  
Atmospheric Science



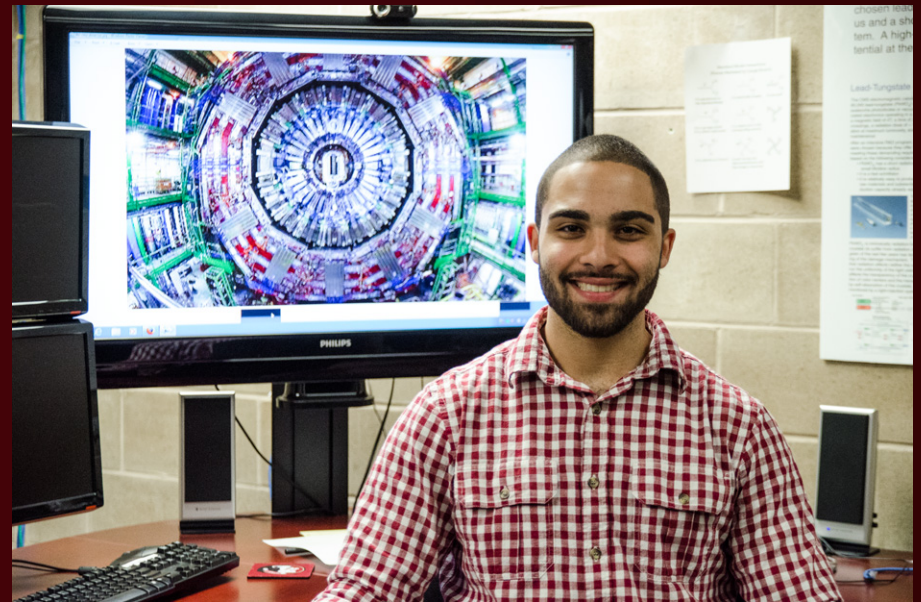
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# Computer Science

Department of Computer Science

College of Engineering and Computer Science@UCF

“...a strong background in math and science, including calculus and physics if possible, is key for success as a computer science major, said Gary Leavens, chairman of UCF’s computer science department.”



- “Florida continues computer science push, hoping to train more teachers, enroll more high school students”, *Orlando Sentinel*, July 18, 2019



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# Chemistry

“The ideal high school preparation to study chemistry and/or biochemistry includes **four years of college preparatory mathematics**, one year of **physics**, one year of **chemistry**, and one year of **biology**.”



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# Biology

## IOWA STATE UNIVERSITY Biology Program

“...it is important to have a strong foundation in high school chemistry. Our office encourages students to complete **a minimum of one year of high school chemistry.**”

“A firm understanding of introductory level physics can lead to greater success for students enrolled in the Biology program. **One year of high school physics is recommended.**”

“Courses in Biology, such as Anatomy and Physiology, Genetics, and Advanced Sciences, are helpful for students entering the Biology program. However, **these courses should not take the place of the Chemistry and Physics courses.**”

“Our office encourages students to **complete Algebra I, Algebra II, Geometry, and Trigonometry in high school, if possible.**”



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# Architecture

## SYRACUSE ARCHITECTURE

- Studio art classes: “extremely important”
- A solid background in physical sciences, including physics
- English and humanities classes
- Developed writing abilities
- Foreign language
- Speech or debate classes
- Math, including trigonometry; calculus recommended but not required



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# A Simple Summary

**Taking**

***Chemistry***

***Physics***

***Calculus***



**in high school equips a student  
for success in a wide range of  
challenging fields!**



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# *Questions?*



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