The Governor’s School @ Innovation Park
A STEM Initiative
(Science, Technology, Engineering, Mathematics)

City of Manassas Public Schools
City of Manassas Park Public Schools
Prince William County Public Schools

in Collaboration with George Mason University

http://aygs.us/
http://www.doe.virginia.gov/instruction/governors_school_programs
General Information

- 3 participating school divisions: Manassas City Public Schools, Manassas Park City Public Schools and Prince William County Public Schools

- 118 slots:
  - 88 PWCS
  - 20 MCPS
  - 10 MPCS

The Learning Environment at GS@IP

- Advanced level courses in which students must synthesize information and apply knowledge
- Projects based on student interests and talents
- Positive learning environment
- Team-based learning
- Flipped approach to learning
- Prepares students for college and the 21st Century workforce
Flipped Classroom

- Engaging in a student-centered learning environment emphasizing active learning and hands-on higher level cognition.

Weekly and Daily Schedule

- Monday, Wednesday, Friday
  - Science and Math
- Tuesday and Thursday
  - Principles of Technology and Engineering (PTE) Classes
  - Research or Engineering Projects

- 1st Period – 7:30 to 9:20 am
- 2nd Period – 9:30 to 11:15 am
## Course Sequence

<table>
<thead>
<tr>
<th>Year</th>
<th>Mathematics</th>
<th>Science</th>
<th>Engineering/ Technology</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior Year</td>
<td>Precalculus/ Calculus I or Calculus I/II</td>
<td>Biology I or Chemistry I or Physics I</td>
<td>Principles of Technology and Engineering I (select from multiple course offerings)</td>
<td>Intro to Science Research or Engineering Project Design and Methodology</td>
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<tr>
<td>Senior Year</td>
<td>Calculus I/II or Calculus III/ Linear Algebra</td>
<td>Biology II or Chemistry II or Physics II</td>
<td>Principles of Technology and Engineering II (select from multiple course offerings)</td>
<td>Hands-on research or engineering project in area of interest</td>
</tr>
</tbody>
</table>

All courses are weighted as AP/Dual Enrollment or Honors

## Math Courses Offerings and Options for College Credit

<table>
<thead>
<tr>
<th>Governor’s School Course Names</th>
<th>George Mason Dual Enrollment Option</th>
<th>Advanced Placement Examination Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Calculus</td>
<td>Math 105</td>
<td></td>
</tr>
<tr>
<td>Calculus I (Part A and B)</td>
<td>Math 124 – Math 125</td>
<td>Calculus AB</td>
</tr>
<tr>
<td>Calculus I-II Honors</td>
<td>Math 115 – Math 116</td>
<td>Calculus BC</td>
</tr>
<tr>
<td>Calculus III/ Linear Algebra</td>
<td>Math 203 - Math 215</td>
<td></td>
</tr>
</tbody>
</table>

School Divisions pay for two 3 or 4 credit course for dual enrollment in the junior year and two 3 or 4 credit courses in the senior year. **TWO of the Four courses paid for must be mathematics.**
### Science Course Offerings and Options for College Credit

<table>
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<th>George Mason Dual Enrollment Option</th>
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<tbody>
<tr>
<td>Advanced Biological Studies I</td>
<td>Biology 103 – 104 + labs General Biology</td>
<td>Advanced Placement Biology</td>
</tr>
<tr>
<td>Advanced Biological Studies II</td>
<td>Biology 124 + lab and 246 Anatomy and Physiology Microbiology</td>
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</tr>
<tr>
<td>Advanced Chemistry I</td>
<td>Chemistry 211-212 + labs General Chemistry</td>
<td>Advanced Placement Chemistry</td>
</tr>
<tr>
<td>Advanced Chemistry II</td>
<td>Chemistry 104 and 155 + labs Introduction to Organic Chemistry and Environmental Chemistry</td>
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</tr>
<tr>
<td>Advanced Physics I I</td>
<td>Physics 243-245 + labs College Physics</td>
<td>Advanced Placement Physics B (both exams)</td>
</tr>
<tr>
<td>Advanced Physics II</td>
<td>Physics 160 – 260 + labs University Physics</td>
<td>Advanced Placement Physics C (both exams)</td>
</tr>
</tbody>
</table>

Innovations

Courses fulfill the CTE elective requirement for an advanced studies diploma

### PTE Course Offerings and Options for College Credit

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<th>George Mason Dual Enrollment Option</th>
<th>Advanced Placement Examination Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Engineering</td>
<td>ENGR 107</td>
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</tr>
<tr>
<td>Geomatics and Engineering Graphics</td>
<td>CEIE 203</td>
<td></td>
</tr>
<tr>
<td>Introduction to Bioengineering</td>
<td>BENG 101 (online; DE only)</td>
<td></td>
</tr>
<tr>
<td>Programming I and II (JAVA)</td>
<td>CS 112 CS 211</td>
<td>Computer Science</td>
</tr>
<tr>
<td>Introduction to Research/Project Design and Methodology I / II</td>
<td>COS 120</td>
<td></td>
</tr>
</tbody>
</table>

Innovations

Courses fulfill the CTE elective requirement for an advanced studies diploma
Mentorship Research Program

- Students spend time developing and engaging in authentic research projects during senior year.
- Projects may be developed and research conducted at the George Mason Campus or with a business or industry mentor off-campus.

Applicant Eligibility and Pre-requisites

- Applications are submitted to the school division in February during the tenth grade year of studies.
- Applications come available by the end of November.
- Math: Students should complete (at minimum) Algebra II/Trig before applying.
- Science: Students should complete 1 year of both Biology and Chemistry before applying; students are also very strongly encouraged to take a Physics course before enrolling.
The Application Process

- The application process and student selection expectations were developed with representation from each school division.
- The number of students from each school division is pre-established.
- The application review for the selection of students is conducted by each school division.

Highlights of the Application

- Complete Career Highlights relating to science, technology, engineering and/or mathematics
  - Activities and Organizations
  - Honors and Recognitions
- Complete Student Portfolio
  - Research Project
    - Submit project from previous Science or Engineering Fairs
  - Study Experience
  - Portfolio Reflection
Highlights of the Application

- Complete Academic Essay
  - 2 Essay Prompts (application and controlled setting)
  - Recommendations – Science and Mathematics Teacher + Other Adult
- Participate in Interview (as applicable, depending on school division requirements)
- Score Options will be completed by Selection Committee
  - Unweighted GPA in STEM Courses
  - Aptitude
  - Achievement

Counseling Services

- Mrs. Bach
  - Available every other day at the GS@IP
  - Discovery Hall 175 & Bull Run 321
  - bachml@pwcs.edu
Points of Contact

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