# SOUTH RIVER STEM MAGNET HIGH SCHOOL PROGRAM OF STUDY AND PROGRAM REQUIREMENTS

**FOR SRHS STUDENTS ENTERING GRADE 9 IN THE 2017-2018 SCHOOL YEAR:**

Course Credit STEM/BMAH Program Graduation Requirements:

- English – 4.0 credits (Honors or AP Level Grades 9-12)
- Social Studies – 4.0 credits (Honors US Government Hybrid, AP Human Geography, Honors or AP World History, Honors or AP US History)
- Science – 4.5 credits (Systems Science A & B (Credits for Honors STEM Physics, Honors STEM Biology, Honors STEM Chemistry), an AP Science, Science Research III)
- Math – 4.0 credits (Honors or AP Level Grades 9-12 increasing in this progression through the Calculus level)
- Physical Education – Fitness for Life, PE Elective – 1.0 credits
- Health – 0.5 credits
- Technology Education – 1.0 credits (STEM Principles of Engineering)
- Foreign Language – 3.0 credits in the same language
- AP Computer Science Principles – 1.0 credits
- Art – 1.0 credits (Foundations of Art & Studio 1: 2D)
- Elective Credits
    - Problem/Project-Based Learning Explorations I & II/Community Challenge (STEM Policy, Science Research III, Community Challenge) Course Sequence - 2.0 credits
- STEM/BMAH Pathway of Study (Pathway I, Pathway II, Capstone) – 3.0 credits
- Business Education – 1.0 Credits (STEM/BMAH Internship)

ADDITIONAL STEM/BMAH PROGRAM GRADUATION REQUIREMENTS:

- Mandatory STEM Summer Programs (must attend the entire time) – Entering Grade 9: STEP Up to STEM - 2 weeks, Entering Grade 10: STEM Summer Summit - 1 week, Entering Grade 11: STEM Summer of Service – 24 hours
- Mandatory STEM/BMAH Summer Assignments – Every summer entering Grades 9 - 12
- Participation in TWO STEM/BMAH-related competitions (App Design Challenge & others)
- Students and Families must attend approximately 4-6 STEM/BMAH Family Night Events OR Saturday/Weekend Events per school year. These events occur in the evenings and on weekends. Dates will be communicated in advance.
- Mandatory Participation and Completion of the off campus STEM/BMAH Job Shadowing Experiences Program (Grade 9 – 6 required, Grade 10 – 6 required, Grade 11 – 2 required, Grade 12 – 1 required)
- Mandatory Completion of a STEM/BMAH Internship (Summer after Grade 11 or Fall of Grade 12)
- Students are expected to carry a FULL COURSE SCHEDULE AT THE STEM/BMAH SCHOOL, IN THE STEM/BMAH PROGRAM for all four years of high school. If students have fulfilled all STEM/BMAH and HS graduation requirements:
    - They have the opportunity to complete their internship during the fall semester of Grade 12 during the school day if scheduling allows AND/OR
    - Students also have the opportunity to attend an institution of higher education to take classes not offered at the high school level
- Students must maintain a 2.8 GPA and good citizenship to remain in the STEM/BMAH Program. Students will be placed on academic probation and/or good citizen contracts if they are not maintaining these standards and then be exited from the program. Students MUST complete all academic and additional requirements noted above. Students will be exited from the program at the conclusion of any academic year for non-compliance with program requirements. Students may be exited immediately for serious violations including those resulting in charges being filed with the criminal justice system.
- Students exiting the magnet program MUST return to their home school. They are not eligible to apply for an out of area transfer to remain at the STEM/BMAH school.
- Students must fully participate in the STEM/BMAH Success Mentorship Program. Juniors & Seniors will serve as mentors and Freshman & Sophomores will serve as mentees.

AFTER-HOURS COURSE OFFERINGS:
Walking Wellness, Fitness for Life, Health

**NOTE:** In the academic schedules that follow, [STEM] denotes a course for which students are cohorted.

# GRADE 9

| ***Summer I*** |
|---|
| *Step-Up to STEM summer experience for Rising 9th Graders Accepted into STEM Magnet High School – 2 Weeks AND Summer Reading Assignment* |

| **9th Grade** | | |
|---|---|---|
| **Fall Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1 A1** | Problem/Project Based Learning Explorations I [STEM] | Principles of Engineering [STEM] |
| **1 A2** | H US Government Hybrid (w/online component) [STEM] | |
| **2** | World Language I | Honors or AP Math I |
| **3** | Honors Systems Science A [STEM] | AP Computer Science Principles [STEM] |
| **4** | Honors English 9 | Elective Period (AVID, Art, Band, Chorus, Orchestra) |

| **9th Grade** | | |
|---|---|---|
| **Spring Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1 A1** | Problem/Project Based Learning Explorations I [STEM] | Principles of Engineering [STEM] |
| **1 A2** | H US Government Hybrid (w/online component) [STEM] | |
| **2** | World Language I | Honors or AP Math I |
| **3** | Honors Systems Science A [STEM] | AP Computer Science Principles [STEM] |
| **4** | Honors English 9 | Elective Period ( AVID, Art, Band, Chorus, Orchestra ) |

# GRADE 10

| ***Summer II*** |
|---|
| *STEM Summer Summit experience for Rising 10th Graders- 1 Week AND Summer Reading Assignment* |

| **10th Grade** | | |
|---|---|---|
| **Fall Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1 A1** | Problem/Project Based Learning Explorations II [STEM] | AP Human Geography |
| **1 A2** | AP Statistics ***or*** Health [STEM] | |
| **2** | World Language II | Honors or AP Math II |
| **3** | Honors Systems Science B [STEM] | STEM Pathway Class I [STEM] |
| **4** | Honors English 10 | Elective Period (Band, Orchestra, Chorus, AVID, PE) |

| **10th Grade** | | |
|---|---|---|
| **Spring Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1 A1** | Problem/Project Based Learning Explorations II [STEM] | AP Human Geography |
| **1 A2** | AP Statistics ***or*** Health [STEM] | |
| **2** | World Language II | Honors or AP Math II |
| **3** | Honors Systems Science B [STEM] | STEM Pathway Class I [STEM] |
| **4** | Honors English 10 | Elective Period (Band, Orchestra, Chorus, AVID, PE) |

# GRADE 11

| ***Summer III*** |
|---|
| *STEM Summer of Service experience for Rising 11th Graders – 1 Week AND Summer Assignment(s)* |

| **11th Grade** | | |
|---|---|---|
| **Fall Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1** | Honors or AP World History [STEM] | Honors or AP Math III |
| **2** | World Language III or Elective | STEM Pathway Class II [STEM] |
| **3** | AP Science | BLOCK SCHEDULED: [STEM]<br>• Problem/Project Based Learning Explorations III: Community Challenge [STEM], STEM Policy [STEM], STEM Science Research 3 [STEM] |
| **4** | Honors English 11 or AP English Language | |

| **11th Grade** | | |
|---|---|---|
| **Spring Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1** | Honors or AP World History [STEM] | Honors or AP Math III |
| **2** | World Language III or Elective | STEM Pathway Class II [STEM] |
| **3** | AP Science | Elective Period (Band, Orchestra, Chorus, AVID, etc.) |
| **4** | Honors English 11 or AP English Language | STEM Elective Period (additional STEM Pathway Class, additional Science, additional Math, etc.) |

# GRADE 12

| ***Summer IV*** |
|---|
| *STEM Internship AND Summer Assignment(s)* |

| **12th Grade** | | |
|---|---|---|
| **Fall Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1** | Honors or AP US History | AP Math IV (must take Calculus by Grade 12) |
| **2** | World Language IV or Elective | STEM Capstone [STEM] |
| **3** | AP Science or Honors Science Elective | Elective Period (Band, Orchestra, Chorus, AVID, etc.) |
| **4** | AP English Literature | STEM Elective Period (Higher Ed, additional STEM Pathway Class, Internship, etc.) |

| **12th Grade** | | |
|---|---|---|
| **Spring Semester** | | |
| **PD** | **A Day** | **B Day** |
| **1** | Honors or AP US History | AP Math IV (must take Calculus by Grade 12) |
| **2** | World Language IV or Elective | STEM Capstone [STEM] |
| **3** | AP Science or Honors Science Elective | Elective Period (Band, Orchestra, Chorus, AVID, etc.) |
| **4** | AP English Literature | STEM Elective Period (Higher Ed, additional STEM Pathway Class etc.) |

# SRHS STEM Pathways of Study

| Pathway | Grade | Pathway Sequence | Course Name |
|---|---|---|---|
| **Earth & Space Systems**<br>Elective Suggestions:<br>• Aerospace Engineering<br>• AP Physics I & II | 10 | Pathway I | STEM AP Environmental Science ***or*** STEM Aeronautics 1 |
| | 11 | Pathway II | Honors Earth & Space Missions |
| | 12 | Pathway III | STEM Research & Data Analysis (RDA) |
| **Computer Science & Theoretical Applied Mathematics**<br>Elective Suggestions:<br>• Digital Electronics | 10 | Pathway I | STEM AP Computer Science |
| | 11 | Pathway II | Honors Mathematical & Scientific Modeling ***and*** Honors Parallel Computing (one class each semester) |
| | 12 | Pathway III | STEM Research & Data Analysis (RDA) |
| **Materials Science & Nanotechnology**<br>Elective Suggestions:<br>• Environment in Society<br>• AP Chemistry | 10 | Pathway I | STEM AP Computer Science |
| | 11 | Pathway II | Honors Materials Science ***and***<br>Honors Nanotechnology Explorations (one class each semester) |
| | 12 | Pathway III | STEM Research & Data Analysis (RDA) |
| **Project Lead the Way Engineering**<br>Elective Suggestions:<br>• Aerospace Engineering<br>• Civil Engineering and Architecture<br>• Aeronautics | 10 | Pathway I | STEM Engineering Designs |
| | 11 | Pathway II | STEM Digital Electronics ***and***<br>STEM Aerospace Engineering ***or*** Civil Engineering and Architecture |
| | 12 | Pathway III | STEM Engineering Design and Development (EDD) |
| **Green Technologies**<br>Elective Suggestions:<br>• Materials Science<br>• Nanotechnology Explorations | 10 | Pathway I | STEM AP Environmental Science |
| | 11 | Pathway II | Honors Environment in Society |
| | 12 | Pathway III | STEM Green Technologies Capstone ***or***<br>STEM Research & Data Analysis (RDA) |