

## Science AS: **Engineering Preparation Pathways**

### **Length of Engineering AS Program**

Starting in MTH 263 Calculus I, the Engineering AS is 66 credits. Completing the program in two years requires 16-17 credits/semester. Please refer to [Engineering AS major page](#).

Starting in MTH 161 Precalculus I and MTH 162 Precalculus II adds 6 credits, for a total of 72 credits, and can add 1-2 semesters of preparation time to the two-year degree.

### **GPA goals**

Guaranteed Admission Agreements specify minimum GPA requirements. For example, 3.0 at VCU, 3.2 at VT, and 3.4 at UVA. It is more important to achieve the target GPA than to finish in two years. (There are no extra points for honors in college.)

### **Engineering Preparation Pathways\***

If you are not yet ready for Engineering, you can take classes in the Science AS major that will also count toward an Engineering major. Two pathways are suggested.

#### **One semester, starting in Precalculus II:**

##### **Semester 1 courses**

- SDV 100
- MTH 162, Precalculus II
- ENG 111, English Composition
- CHM 111, Chemistry I
- General Education Elective 1
- (General Education Elective 2)
- 14-17 credits

##### **Features**

Start EGR classes in second semester  
Can finish in 2 years with Calculus II in summer  
Standard full-time 16-17 credit course load

#### **Two semesters starting in Precalculus I:**

##### **Semester 1 courses**

- SDV 100
- MTH 161, Precalculus I
- ENG 111, English Composition
- General Education Elective 1
- General Education Elective 2 or MDE 61
- 13 credits

##### **Semester 2 courses**

- MTH 162, Precalculus II
- ENG 112, English Composition
- CHM 111, General Chemistry I
- General Education Elective 3
- 13 credits

##### **Features**

Start EGR classes in third semester  
Can finish in 2.5 years with Calculus I in summer  
Can finish in 3 years with 11-13 credit load  
See below for pacing suggestion

\* All classes (except Precalculus) count for both Science and Engineering majors.  
See next page for more information

### **Academic workload and 80-20 Rule**

Academic workload is the number of hours required per week to successfully complete a class. It includes everything: class meetings, homework, reading, reports, test preparation, group work, etc. In high school, 75-80% of the learning happens during the day, with 20-25% coming from homework. In college, it is reversed, with 75-80% of the learning accomplished outside of class. This translates into 3 hours of outside work for every hour in class for STEM courses, making the total workload equal to the number of credits times 4 (a little lower for non-STEM classes).

A two-year full-time Engineering program with 16-17 credits per semester is 55-65 hours/week of commitment. Summer classes occur in only 8 weeks, for the same work, so the workload per week is almost twice as many hours as for a regular semester class.

A three-year Engineering program with 11-13 credits per semester is 40-50 hours/week of commitment and is more compatible with a job schedule with 20 hours per week or more.

### **SDV 100 College Success Skills**

We recommend that students take this 1-credit class during the summer before the first semester to reduce the first semester workload. There are 5-week versions all summer and, as part of the Fall semester, 3-day versions in August. SDV 101 Introduction to STEM is preferable, when offered. Taking SDV during the first semester adds 1 credit and 2 hours/week to the academic workload.

### **AP or Dual Enrollment Credit**

Having credit for English, History, or other courses reduces the number of General Education electives to take at Brightpoint, which reduces the number of credits (and workload) per semester.

### **Pacing for General Education and STEM classes**

MTH 263 and EGR 121 are required for all the remaining core courses in the Engineering degree. It will not speed your degree progression to take extra credits of GenEd classes, while you are completing the two-semester Preparation Pathway.

### **Scheduling Courses**

During your engineering preparation semester(s), it will be possible to take all your courses at either the Chester or Midlothian campus. Many courses will be available online. Once you complete the preparation semester(s), the core engineering classes are held on the Midlothian campus.

### **Completed the Pathway?**

Once you are ready to enroll in MTH 263 Calculus I, then you need to fill out the [Engineering Transfer Form](#). Once you submit the form you will be assigned a new advisor in Engineering. Your new advisor will email you and ask you to set up a meeting so that you can plan out your next semesters.