COMPUTER SCIENCE, B.S. (ABINGTON)

Begin Campus: Any Penn State Campus
End Campus: Abington

Suggested Academic Plan
The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years’ suggested academic plans, please visit the archive (https://bulletins.psu.edu/undergraduate/archive/) to view the appropriate Undergraduate Bulletin edition (Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

GENERAL OPTION: Computer Science, B.S. at Abington Campus
The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Plan report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 15 or 30H (GWS)†</td>
<td>3</td>
<td>CAS 100 (GWS)†</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 121 or 131 (GQ)‡</td>
<td>3</td>
<td>CMPSC 122/132‡</td>
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<tr>
<td>MATH 140 (GO)†‡</td>
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<td>MATH 141 (GO)†‡</td>
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</tr>
<tr>
<td>General Education Course (GH)</td>
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<td>General Education Course (GA)</td>
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<tr>
<td>General Education Course (GHW)</td>
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<td>PHYS 211 (GN)¹</td>
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<td><strong>Total Credits</strong></td>
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Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education Course (GS)</td>
<td>3</td>
<td>Integrated/Inter-domain</td>
<td>3</td>
</tr>
<tr>
<td>General Education Course (GN)¹</td>
<td>2-3</td>
<td>General Education Course (Exploration)</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 360²</td>
<td>3</td>
<td>MATH 220</td>
<td>2</td>
</tr>
<tr>
<td>CMPSC 312²</td>
<td>3</td>
<td>MATH 318, STAT 318, or STAT 414</td>
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<tr>
<td>CMPSC 330²</td>
<td>3</td>
<td>CMPSC 462²</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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Third Year

<table>
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<tr>
<th>Fall</th>
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<th>Spring</th>
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<tbody>
<tr>
<td>CMPSC 463²</td>
<td>3</td>
<td>General Education Course (Exploration)</td>
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</tr>
<tr>
<td>ENGL 202C (GWS)‡</td>
<td>3</td>
<td>CMPSC 470²</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 221²</td>
<td>3</td>
<td>Additional Computer Science (Select 3 Credits)</td>
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Fourth Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPSC 487W²</td>
<td>3</td>
<td>CMPSC 472²</td>
<td>3</td>
</tr>
<tr>
<td>Supporting Courses: Select 2 credits of 100-400 level courses in consultation with an academic adviser³</td>
<td>2</td>
<td>CMPSC 488²</td>
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<tr>
<td>Additional Computer Science (Select 3 Credits)</td>
<td>3</td>
<td>Additional Computer Science (Select 3 Credits)</td>
<td>3</td>
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<tr>
<td>Supporting Courses: Select 3 credits of 300-400 level courses in consultation with an academic adviser³</td>
<td>3</td>
<td>Additional Computer Science/Math Courses (Select 3 Credits)</td>
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<tr>
<td>Integrated/Inter-domain</td>
<td>3</td>
<td><strong>Total Credits</strong></td>
<td><strong>120-121</strong></td>
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</tbody>
</table>

* Course requires a grade of C or better for the major
† Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
‡ Course satisfies General Education and degree requirement

Program Notes:

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GH, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Notes:

1 Natural Sciences (GN), recommended courses
   • PHYS 212 General Physics: Electricity and Magnetism

2 Students must earn a 2.5 or higher grade point average in the following courses: CMPSC 221, CMPSC 312, CMPSC 330, CMPSC 360, CMPSC 430, CMPSC 460, CMPSC 462, CMPSC 463, CMPSC 469, CMPSC 470, CMPSC 472, CMPSC 487W, and CMPSC 488.

3 3 credits from courses at 300-400 level and 5 credits from courses at 100-400 level are to be chosen in consultation with the adviser and with program approval.
1. General Education & Entrance to Major Requirements (55 credits)
   a. English (9 credits)
      i. ENGL 15S (GWS) or ENGL 30T (GWS)
      ii. ENGL 202C (GWS)
      iii. CAS 100 (GWS)
   b. Mathematics (10 credits)
      i. MATH 140 (GQ)
      ii. MATH 141 (GQ)
      iii. MATH 220 (GQ)
   c. Computer Science (6 credits)
      i. CMPSC 121/CMPSC 131 (GQ)
      ii. CMPSC 122/CMPSC 132
   d. Natural Sciences (6 credits)
      i. PHYS 211 (GN)
      ii. Additional 2 credits of any courses with a GN suffix
   e. Arts† (3 credits)
      i. 3 credits of any courses with a GA suffix
   f. Humanities† (3 credits)
      i. 3 credits of any courses with a GH suffix
   g. Social & Behavioral Sciences† (3 credits)
      i. 3 credits of any courses with a GS suffix
   h. Health & Physical Activities (3 credits)
      i. 3 credits of any courses with a GHW suffix
   i. Integrated/inter-domain courses (6 credits)
   j. 6 additional credits of exploration (GA, GH, GN, GS or inter-domain)

2. Core Requirements (65 credits)
   a. Required Computer Science Courses - Students must earn a 2.5 or higher-grade point average in the Required Computer Science Courses (39 credits):
      i. CMPSC 221
      ii. CMPSC 312
      iii. CMPSC 330
      iv. CMPSC 360
      v. CMPSC 430
      vi. CMPSC 460
      vii. CMPSC 462
      viii. CMPSC 463
      ix. CMPSC 469
      x. CMPSC 470
      xi. CMPSC 472
      xii. CMPSC 487W
      xiii. CMPSC 488
      iv. CMPSC 414
      v. CMPSC 421
      vi. CMPSC 426
      vii. CMPSC 438
      viii. CMPSC 441
      ix. CMPSC 444
      x. CMPSC 445
      xi. CMPSC 446
      xii. CMPSC 455/MATH 455
      xiii. CMPSC 457
      xiv. CMPSC 475
      xv. CMPSC 496
      xvi. CMPSC 497
      xvii. MATH 401
      xviii. MATH 410
      xix. MATH 411
      xx. MATH 412
      xxi. MATH 425
      xxii. MATH 430
      xxiii. MATH 435
      xxiv. MATH 448
      xxv. MATH 465
      xxvi. MATH 468
      xxvii. MATH 485
      xxviii. MATH 496
      xxix. MATH 497
      xxx. STAT 401
      xxxi. STAT 415/MATH 415
      xxxii. STAT 462
      xxxiii. STAT 463
   b. Required Mathematics Courses - Select one course from the following (3 credits):
      i. STAT 318/MATH 318
      ii. STAT 414/MATH 414

3. Additional Courses: Technical Electives (15 credits)
   a. Select at least 15 credits from the following. At least 9 of these additional course credits must be from courses with a CMPSC prefix. Other courses are to be chosen in consultation with the adviser and with program approval.
      i. CMPSC 313
      ii. CMPSC 412
      iii. CMPSC 413
   b. Required Mathematics Courses - Select one course from the following (3 credits):
      i. STAT 318/MATH 318
      ii. STAT 414/MATH 414

4. Supporting Courses (8 credits)
   a. 3 credits from courses at 300-400 level and 5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.
DATA SCIENCE OPTION: Computer Science, B.S. at Abington Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

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<td>CAS 100 (GWS) ‡</td>
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<tr>
<td>CMPSC 131 (GQ) ‡</td>
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<td>CMPSC 132 ‡</td>
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<td>MATH 140 (GQ) ‡ ‡</td>
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<td>MATH 141 (GQ) ‡ ‡</td>
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<td>2</td>
<td>MATH 220</td>
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<tr>
<td>CMPSC 312†</td>
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<td>3 MATH 318, STAT 318, or STAT 414</td>
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<tr>
<td>CMPSC 330†</td>
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<td>3 CMPSC 462†</td>
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<tr>
<td></td>
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<td>DS 220†</td>
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<td>General Education Course (Exploration)</td>
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<td>ENGL 202C (GWS) ‡</td>
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<td>CMPSC 445†</td>
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<tr>
<td>STAT 401</td>
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<td>CMPSC 469†</td>
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</tr>
<tr>
<td>CMPSC 430‡</td>
<td>3</td>
<td>CMPSC 460‡</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 441‡</td>
<td>3</td>
<td>Supporting Courses: Select 3 credits</td>
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<tr>
<td></td>
<td></td>
<td>of 100-400 level courses in consultation with an academic adviser ‡</td>
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<td></td>
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<td>CMPSC 472†</td>
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<tr>
<td>Supporting Courses: Select 2 credits of 100-400 level courses in consultation with an academic adviser ‡</td>
<td>2</td>
<td>CMPSC 488‡</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 445‡</td>
<td>3</td>
<td>Additional Course (Select 3 Credits)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 462</td>
<td>3</td>
<td>Additional Course (Select 3 Credits)</td>
<td>3</td>
</tr>
</tbody>
</table>

Integrated/Inter-domain 3

Total Credits 120-121

* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

1. Natural Sciences (GN)
2. Students must earn a 2.5 or higher grade point average in the following courses: DS 220, CMPSC 312, CMPSC 360, CMPSC 430, CMPSC 445, CMPSC 446, CMPSC 460, CMPSC 462, CMPSC 463, CMPSC 469, CMPSC 470, CMPSC 472, CMPSC 487W, and CMPSC 488.
3. 5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.

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Program Notes:

1. General Education & Entrance to Major Requirements (55 credits)
   a. English (9 credits)
      i. ENGL 15S (GWS) or ENGL 30T (GWS)
      ii. ENGL 202C (GWS)
      iii. CAS 100 (GWS)
   b. Mathematics (10 credits)
      i. MATH 140 (GQ)
      ii. MATH 141 (GQ)
      iii. MATH 220 (GQ)
   c. Computer Science (6 credits)
      i. CMPSC 121/CMPSC 131 (GQ)
      ii. CMPSC 122/CMPSC 132
   d. Natural Sciences (6 credits)
      i. PHYS 211 (GN)
      ii. Additional 2 credits of any courses with a GN suffix
   e. Arts †: (3 credits)
      i. 3 credits of any courses with a GA suffix
   f. Humanities †: (3 credits)
      i. 3 credits of any courses with a GH suffix
   g. Social & Behavioral Sciences †: (3 credits)
      i. 3 credits of any courses with a GS suffix
   h. Health & Physical Activities (3 credits)
      i. 3 credits of any courses with a GH suffix
i. Integrated/inter-domain courses (6 credits)
j. 6 additional credits of exploration (GA, GH, GN, GS or inter-domain)

2. Core Requirements (65 credits)
   a. Computer Science/Data Science/Statistics Courses - Students must earn a 2.5 or higher grade-point average in the Required Computer Science Courses (45 credits):
      i. DS 220
      ii. CMPSC 312
      iii. CMPSC 330
      iv. CMPSC 360
      v. CMPSC 430
      vi. CMPSC 441
      vii. CMPSC 445
      viii. CMPSC 446
      ix. CMPSC 460
      x. CMPSC 462
      xi. CMPSC 463
      xii. CMPSC 469
      xiii. CMPSC 472
      xiv. CMPSC 487W
      xv. CMPSC 488
   b. Required Mathematics/Statistics Courses (9 credits):
      i. STAT 401
      ii. STAT 462
      iii. Select one course from the following:
          1. STAT 318/MATH 318
          2. STAT 414/ MATH 414
   c. Additional Courses: Technical Electives (6 credits)
      a. Select at least 6 credits from the following. Other courses are to be chosen in consultation with the adviser and with program approval.
         i. CMPSC 313
         ii. CMPSC 412
         iii. CMPSC 413
         iv. CMPSC 414
         v. CMPSC 421
         vi. CMPSC 426
         vii. CMPSC 438
         viii. CMPSC 444
         ix. CMPSC 455/MATH 455
         x. CMPSC 457
         xi. CMPSC 470
         xii. CMPSC 475
         xiii. CMPSC 496
         xiv. CMPSC 497
         xv. MATH 401
         xvi. MATH 410
         xvii. MATH 411
         xviii. MATH 412
         xix. MATH 425
         xx. MATH 430
         xxi. MATH 435
         xxii. MATH 448
   
   d. 5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.

   xxiii. MATH 465
   xxiv. MATH 468
   xxv. MATH 485
   xxvi. MATH 496
   xxvii. MATH 497
   xxviii. STAT 415/MATH 415
   xxix. STAT 463

4. Supporting Courses (5 credits)
   a. 5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.