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 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.

First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>Fall</td>
<td>ENGL 15 or 30H (GWS)†</td>
<td>3</td>
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<tr>
<td></td>
<td>CMPSC 121 or 131 (GQ)*#</td>
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<td></td>
<td>MATH 140 (GQ)*#</td>
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Second Year

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<tr>
<td>Fall</td>
<td>General Education Course (GS)</td>
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<tr>
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<td>General Education Course (GN)†</td>
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</tr>
<tr>
<td></td>
<td>CMPSC 360²</td>
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</tr>
<tr>
<td></td>
<td>CMPSC 312²</td>
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<td>CMPSC 330²</td>
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Third Year

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<th>Semester</th>
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<tbody>
<tr>
<td>Fall</td>
<td>CMPSC 463²</td>
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<tr>
<td></td>
<td>ENGL 202C (GWS)†</td>
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<td>CMPSC 221²</td>
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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 (GHW, 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.

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 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 478W
      xiii. CMPSC 488
   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

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.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 15 or 30H (GWS)‡</td>
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<td>CAS 100 (GWS)‡</td>
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<tr>
<td>CMPSC 131 (GQ)§</td>
<td>3</td>
<td>CMPSC 132§</td>
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<tr>
<td>MATH 140 (GQ)¶</td>
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<td>MATH 141 (GQ)¶</td>
<td>4</td>
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<tr>
<td>General Education Course (GHW)</td>
<td>3</td>
<td>PHYS 211 (GN)†</td>
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<tr>
<td>Total Credits</td>
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<th>Second Year</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>General Education Course (GS)</td>
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<td>Integrated/Inter-domain</td>
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<tr>
<td>General Education Course (GN)†</td>
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<td>General Education Course (Exploration)</td>
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<td>CMPSC 360§</td>
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<td>MATH 220</td>
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<td>CMPSC 312§</td>
<td>3</td>
<td>MATH 318, STAT 318, or STAT 414</td>
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<tr>
<td>CMPSC 330§</td>
<td>3</td>
<td>CMPSC 462§</td>
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<td></td>
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<tr>
<td>DS 220§</td>
<td>2</td>
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<td>Total Credits</td>
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<tr>
<th>Third Year</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CMPSC 463§</td>
<td>3</td>
<td>General Education Course (Exploration)</td>
<td>3</td>
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<tr>
<td>ENGL 202C (GWS)‡</td>
<td>3</td>
<td>CMPSC 445§</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>STAT 401</td>
<td>3</td>
<td>CMPSC 469§</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CMPSC 430§</td>
<td>3</td>
<td>CMPSC 460§</td>
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<td>CMPSC 441§</td>
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<td>Supporting Courses: Select 3 credits of 100-400 level courses in consultation with an academic adviser*</td>
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<td>Total Credits</td>
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<tr>
<th>Fourth Year</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CMPSC 487W§</td>
<td>3</td>
<td>CMPSC 472§</td>
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<td></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>
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<tr>
<td>CMPSC 445§</td>
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<td>Additional Course (Select 3 Credits)</td>
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<tr>
<td>STAT 462</td>
<td>3</td>
<td>Additional Course (Select 3 Credits)</td>
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<tr>
<td>Total Credits</td>
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<td>15</td>
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</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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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
Integrated/inter-domain courses (6 credits)

6 additional credits of exploration (GA, GH, GN, GS or inter-domain)

Core Requirements (65 credits)

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

Required Mathematics/Statistics Courses (9 credits):

i. STAT 401
ii. STAT 462

Select one course from the following:
1. STAT 318/MATH 318
2. STAT 414/MATH 414

Additional Courses: Technical Electives (6 credits)

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

Supporting Courses (5 credits)

5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.