

# 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 2024-25 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.

### 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

Fall	Credits Spring	Credits
ENGL 15 or 30H (GWS) <sup>†</sup>	3 CAS 100 (GWS) <sup>†</sup>	3
CMPSC 121 or 131 (GQ) <sup>*#</sup>	3 CMPSC 122/132 <sup>*#</sup>	3
MATH 140 (GQ) <sup>*†#</sup>	4 MATH 141 (GQ) <sup>*†#</sup>	4
General Education Course (GH)	3 General Education Course (GA)	3
General Education Course (GHW)	3 PHYS 211 (GN) <sup>†</sup>	4
PSU 1	1	
	<b>17</b>	<b>17</b>

#### Second Year

Fall	Credits Spring	Credits
General Education Course (GS)	3 Integrated/Inter-domain	3
General Education Course (GN) <sup>1</sup>	2-3 General Education Course (Exploration)	3
CMPSC 360 <sup>*2</sup>	3 MATH 220	2
CMPSC 312 <sup>2</sup>	3 MATH 318, STAT 318, or STAT 414	3
CMPSC 330 <sup>2</sup>	3 CMPSC 462 <sup>2</sup>	3
	CMPSC 469 <sup>2</sup>	3
	<b>14-15</b>	<b>17</b>

#### Third Year

Fall	Credits Spring	Credits
CMPSC 463 <sup>2</sup>	3 General Education Course (Exploration)	3
ENGL 202C (GWS) <sup>†</sup>	3 CMPSC 470 <sup>2</sup>	3
CMPSC 221 <sup>2</sup>	3 Additional Computer Science (Select 3 Credits)	3
CMPSC 430 <sup>2</sup>	3 CMPSC 460 <sup>2</sup>	3

Additional Computer Science/Math Courses #(Select 3 Credits)	3 Supporting Courses: Select 3 credits of 100-400 level courses in consultation with an academic adviser <sup>3</sup>	3
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#### Fourth Year

Fall	Credits Spring	Credits
CMPSC 487W <sup>2</sup>	3 CMPSC 472 <sup>2</sup>	3
Supporting Courses: Select 2 credits of 100-400 level courses in consultation with an academic adviser <sup>3</sup>	2 CMPSC 488 <sup>2</sup>	3
Additional Computer Science (Select 3 Credits)	3 Additional Computer Science (Select 3 Credits)	3
Supporting Courses: Select 3 credits of 300-400 level courses in consultation with an academic adviser <sup>3</sup>	3 Additional Computer Science/Math Courses (Select 3 Credits)	3
Integrated/Inter-domain	3	
	<b>14</b>	<b>12</b>

#### Total Credits 121-122

- \* 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

- <sup>1</sup> Natural Sciences (GN), recommended courses
  - PHYS 212 General Physics: Electricity and Magnetism

- <sup>2</sup> 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.

- <sup>3</sup> 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.

#### 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. Artst† (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
- 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

- 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

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

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### First Year

Fall	Credits Spring	Credits
ENGL 15 or 30H (GWS) <sup>†</sup>	3 CAS 100 (GWS) <sup>†</sup>	3
CMPSC 131 (GQ) <sup>*#</sup>	3 CMPSC 132 <sup>*#</sup>	3
MATH 140 (GQ) <sup>*†#</sup>	4 MATH 141 (GQ) <sup>*†#</sup>	4
General Education Course (GH)	3 General Education Course (GA)	3
General Education Course (GHW)	3 PHYS 211 (GN) <sup>†</sup>	4
PSU 1	1	
	<b>17</b>	<b>17</b>

### Second Year

Fall	Credits Spring	Credits
General Education Course (GS)	3 Integrated/Inter-domain	3
General Education Course (GN) <sup>1</sup>	2-3 General Education Course (Exploration)	3
CMPSC 360 <sup>*2</sup>	3 MATH 220	2
CMPSC 312 <sup>2</sup>	3 MATH 318, STAT 318, or STAT 414	3
CMPSC 330 <sup>2</sup>	3 CMPSC 462 <sup>2</sup>	3
	DS 220 <sup>2</sup>	3
	<b>14-15</b>	<b>17</b>

### Third Year

Fall	Credits Spring	Credits
CMPSC 463 <sup>2</sup>	3 General Education Course (Exploration)	3
ENGL 202C (GWS) <sup>†</sup>	3 CMPSC 445 <sup>2</sup>	3
STAT 401	3 CMPSC 469 <sup>2</sup>	3
CMPSC 430 <sup>2</sup>	3 CMPSC 460 <sup>2</sup>	3
CMPSC 441 <sup>2</sup>	3 Supporting Courses: Select 3 credits of 100-400 level courses in consultation with an academic adviser <sup>3</sup>	3
	<b>15</b>	<b>15</b>

### Fourth Year

Fall	Credits Spring	Credits
CMPSC 487W <sup>2</sup>	3 CMPSC 472 <sup>2</sup>	3
Supporting Courses: Select 2 credits of 100-400 level courses in consultation with an academic adviser <sup>3</sup>	2 CMPSC 488 <sup>2</sup>	3
CMPSC 446 <sup>2</sup>	3 Additional Course (Select 3 Credits)	3

STAT 462	3 Additional Course (Select 3 Credits)	3
Integrated/Inter-domain	3	
	<b>14</b>	<b>12</b>

### Total Credits 121-122

\* 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

<sup>1</sup> Natural Sciences (GN)

<sup>2</sup> 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.

<sup>3</sup> 5 credits of unrestricted electives at 100-400 level are to be chosen in consultation with the adviser and with program approval.

### 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:

- General Education & Entrance to Major Requirements (55 credits)
  - English (9 credits)
    - ENGL 15S (GWS) or ENGL 30T (GWS)
    - ENGL 202C (GWS)
    - CAS 100 (GWS)
  - Mathematics (10 credits)
    - MATH 140 (GQ)
    - MATH 141 (GQ)
    - MATH 220 (GQ)
  - Computer Science (6 credits)
    - CMPSC 121/CMPSC 131 (GQ)
    - CMPSC 122/CMPSC 132
  - Natural Sciences (6 credits)
    - PHYS 211 (GN)
    - Additional 2 credits of any courses with a GN suffix
  - Arts †: (3 credits)
    - 3 credits of any courses with a GA suffix
  - Humanities †: (3 credits)
    - 3 credits of any courses with a GH suffix
  - Social & Behavioral Sciences †: (3 credits)
    - 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. 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
- 3. 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
    - 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.