



## Computer Science Major Requirements (rev 4-7-15)

**Degree Requirements: 40 courses comprised of** A) GEP Signature Core, B) GEP Variable courses, C) Major Requirements, D) GEP Integrative Learning Courses, E) free electives, and F) Overlays

Thirty (30) credits of science and mathematics are required for the Computer Science Major with at least fifteen (15) credits of mathematics (with the exception of pre-calculus MAT 120). See the next page for additional information on this requirement.

A. GEP Signature Core Courses (6 Courses) All non-transfer students must take these 6 Courses at SJU.	Semester completed
1. PHL 154 – Moral Foundations	
2. THE 154 – Faith, Justice & the Catholic Tradition	
3. ENG 102 – Texts and Contexts (pre-req: ENG 101)	
4. HIS 154 – Forging the Modern World	
5. First Year Seminar	
6. Faith and Reason Course (pre-reqs: PHL 154 and THE 154) <b>**See note on page 3 regarding the requirements for the Class of 2014 and Class of 2015</b>	

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B. Variable Course (Maximum 9 courses)	Course(s) required/taken Please note students may earn AP credit and/or use transfer credits to meet these requirements.	Semester Completed	
Fine Arts or Literature	One course		
Mathematics (Beauty)	Math 155 or MAT 161 required. A score of 4 or 5 on the Calculus AB or BC AP exam fulfills this requirement.		
Natural Science	One course - any lab-based natural science course intended for science majors		
Non-native Language	1-2 courses based on your placement level; AP credit may be given. <b>Please Note:</b> only one course is required if placed at the 301 level (or higher). If placed lower than 301, two courses are required.	1	2
Social/Behavioral Science	One course		
Philosophy (Philosophical Anthropology)	One course		
Theology (Religious Difference)	One course - cannot be used to satisfy the diversity/ globalization/non-Western area studies degree requirement		
Writing	ENG 101 Craft of Language or 4 or a 5 on the English Literature or Language AP test.		

C. GEP Integrative Learning Courses for Computer Science (3 courses)	Semester Completed
1-2. Two additional math courses (excluding MAT 120 pre-calculus) to count towards the 30 math and science credits (required by ABET)	
3. One Lab-Based Natural Science (one in addition to the GEP NatSci Req)	



## Computer Science Major – Degree Requirements, cont’d

(For the Classes of 2014, 2015, 2016 & transfer students who entered SJU under the GEP)

Thirty (30) credits of science and mathematics are required for the Computer Science Major with at least fifteen (15) credits of mathematics. Please note that Pre-Calculus (MAT 120) does not count toward this requirement. CSC 240 and CSC 241 Discrete Structures I and II will count toward the 30 required credits as mathematics. The GEP Math Beauty, GEP Natural Science and GEP Integrative Learning course credits also count toward this requirement. Up to three additional Science or Mathematics courses may be needed in order to satisfy this requirement.

D. Computer Science Major Requirements	Semester completed
1. CSC 120 Computer Science I	
2. CSC 121 Computer Science II	
3. CSC 240 Discrete Structures I	
4. CSC 241 Discrete Structures II	
5. CSC 201 Data Structures	
6. CSC 202 Computer Architecture	
7. CSC 261 Principles of Programming Languages	
8. CSC 281 Design & analysis of Algorithms	
9. CSC 310 Computer Systems	
10. CSC 315 Software Engineering	
11. CSC 495 Senior Project	
12. CS Upper Division Elective numbered CS 340 or higher (1 of 4)	
13. CS Upper Division Elective numbered CS 340 or higher (2 of 4)	
14. CS Upper Division Elective numbered CS 340 or higher (3 of 4)	
15. CS Upper Division Elective numbered CS 340 or higher (4 of 4)	
<i>With the approval of the academic advisor, up to three additional (3) Science or Mathematics (other than pre-calculus) courses may be required in order to satisfy the overall requirement of thirty credits of mathematics and sciences.</i>	
16. Math/Science elective (1 of 3)	
17. Math/Science elective (2 of 3)	
18. Math/Science elective (3 of 3)	

E. Free Electives Note that the number of free electives may vary depending on AP credits earned, number of courses required for the non-native language requirement, and number of math/sciences courses completed for the major (see note above in major requirements)	

<b>F. Overlays</b> (3 overlays that may be combined with other requirements above, unless otherwise noted) **See note on the reverse below regarding the requirements for the Class of 2014, 2015, and 2016	
1. Writing-Intensive	
2. Ethics-Intensive (pre-req: PHL 154)	
3. Diversity/ Globalization/non-Western	

***Additional Information – Overlays and Faith & Reason Requirements***

As noted above, in addition to the 40 courses outlined, students must complete: (1) one course certified in diversity, globalization, or non-Western studies, (2) one ethics-intensive course, and (3) one writing-intensive course. Below are specific guidelines for each class with regard to overlay requirements and the Faith & Reason signature core course:

***Class of 2014:***

Of the four GEP requirements, Faith & Reason and the three overlay requirements, students in the class of 2014 need to satisfy two of the four requirements. With respect to these four components of the GEP, this means that students in the class of 2014 are required to complete (1) a Faith and Reason course and one overlay requirement OR (2) two overlay requirements.

***Class of 2015:***

Of the four GEP requirements, Faith & Reason and the three overlay requirements, students in the class of 2015 are required to complete three of the four. Students in the class of 2015 are required to complete (1) a Faith and Reason course and two overlay requirements OR (2) all three overlay requirements.

***Class of 2016:***

Students in the Class of 2016 must complete the GEP Faith & Reason course requirement and two of the three overlays.

***Class of 2017***

Students in the Class of 2017 are required to complete all four GEP requirements, Faith & Reason and the three overlays.

**Secondary Major in Computer Science (Advisor: Dr. Wei)**

With the approval of the Department, students who wish to complete a secondary major in Computer Science combined with a primary major in another discipline must take twelve (12) courses which include:

- CSC 120: Computer Science I
- CSC 121: Computer Science II
- CSC 240: Discrete Structures I
- CSC 241: Discrete Structures II
- CSC 201: Data Structures
- CSC 202: Computer Architecture
- CSC 261: Principles of Programming Languages
- CSC 281: Design and Analysis of Algorithms
- CSC 310: Computer Systems
- CSC 315: Software Engineering
- Two additional CSC elective courses numbered 340 or above

Students completing a secondary major in computer science are not required to complete the thirty (30) credits of science and mathematics that is required of the students with a primary major in Computer Science.

Below is listed the typical curriculum for a GEP computer science major, presuming that the student enters as a freshman, without needing special background courses (such as Pre-calculus) or with advanced placement in mathematics or computer science.

<b>Year/Semester</b>	<b>Fall</b>	<b>Spring</b>
First-Year	CSC 120: Computer Science I Mathematics (Beauty) <sup>1</sup> ENG 101 HIS 154 or First Year Seminar Non-Native Language I	CSC 121: Computer Science II Mathematics (ILC 1) <sup>1</sup> ENG 102 HIS 154 or First Year Seminar Non-Native Language II
Sophomore	CSC 240: Discrete Structures I <sup>1</sup> CSC 201: Data Structures CSC 202: Computer Architecture PHL 154 Social/Behavioral Science	CSC 241: Discrete Structures II <sup>1</sup> CSC 281: Design & Analysis of Algorithms Mathematics (ILC 2) <sup>1</sup> THE 154 Art/Literature
Junior	CSC 315: Software Engineering CSC 261: Principles of Prog. Languages Lab Science I <sup>1</sup> PHL Anthropology Mathematics or Science <sup>1</sup>	CSC 310: Computing Systems CSC Elective 1 Lab Science II (ILC 3) <sup>1</sup> THE Religious Difference Free Elective or Overlay
Senior	CSC Elective 2 CSC Elective 3 Mathematics or Science <sup>1</sup> or Free Elective Faith & Reason Free Elective or Overlay	CSC 495: Computer Science Project CSC Elective 4 Mathematics or Science <sup>1</sup> or Free Elective Free Elective or Overlay Free Elective

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