

Requirements	Min. Hours Required	Course(s) Fulfilled
REQUIRED COURSEWORK		
18HRS TOTAL		
Two Core Courses:	6	
C S 303E: Elements of Computer Programming C S 313E: Elements of Software Design		
Nutrition: 306 or 312		
Four of the Following Upper Division Courses:	12	
C S 323E: Elements of Scientific Computing		
C S 324E: Elements of Graphics and Visualization		
C S 326E: Elements of Networking		
C S 327E: Elements of Databases		
C S 329E: Advanced Topics in Elements of Computing		
• Elements of Data Visualization		
• Elements of Mobile Computing		
• Elements of Web Programming		
• Elements of Data Analytics		
• Elements of Game Development		
C S 330E: Elements of Software Engineering I		
C S 331E: Elements of Software Engineering II		
C S 333E: Elements of Data Integration		
<i>*Multiple topics of C S 329E may count</i>		

toward the 12 additional hour requirement as long as topics vary

**With the approval of the certificate program faculty committee, other appropriate upper division courses may be counted toward the elective requirement.*

**Please visit our website for a list of pre-approved substitute courses: <https://www.cs.utexas.edu/undergraduate/programming-and-computation-certificate>*

**No more than 2 substitutions are allowed to count toward the 18hr Programming and Computation Certificate*

POLICIES & PROCEDURES

- Application for admission required
- Total of 18 hours required; 12 of which must be upper division
- Students may only register for up to 3 upper division C S Elements courses in a given semester
- All coursework must be completed with a grade of C- or higher
- Please visit the certificate website for additional information: <https://www.cs.utexas.edu/undergraduate/programming-and-computation-certificate>