Requirements for the Bachelor of Science Degree in Computer Science with a Concentration in Information Security

Total Units Required to Graduate 180-185 units
Major Requirements 128 units
Major Courses 68
Cognates 30
GINS Cognates 30
Minor Requirements 0 units
Other University Requirements 52-57 units
CSUB 101 2
US History 5
Area A 15
Area B 5*
Area C 10*
Area D 10*
Theme 1 0*
Theme 2 0*
Theme 3 0*
GRE 5
GWAR (Exam or Class) 0-5
Additional Units 0 units
* Computer Science General Education reductions are described in General Education Notes below.

1. Introductory Courses (16 units)
CMPS 150 – Introduction to Unix (or CMPS 215 – Unix Programming Environment)
CMPS 221 – Programming Fundamentals
CMPS 222 – Object-Oriented Programming
CMPS 223 – Data Structures and Algorithms

2. Intermediate Courses (30 units)
CMPS 295 – Discrete Structures
CMPS 312 – Algorithm Analysis and Design
CMPS 335 – Software Engineering (project should have security focus)
CMPS 350 – Programming Languages
CMPS 360 – Operating Systems
CMPS 376 – Computer Networks

3. Advanced Courses – Information Security Focus (22 units)
CMPS 490A and 490B – Senior Project (project should have security focus)
Choose at least 15 units from the following list (one course must be 400-level):
CMPS 215 – Unix Prog. Environment AND CMPS 216 – Unix System Administration
CMPS 340 – Introduction to Digital Forensics
CMPS 342 – Database Systems
CMPS 445 – Data Mining and Visualization
CMPS 451 – Vulnerability Analysis
MATH/CMPS 475 – Applied Cryptography
CMPS 476 – Advanced Computer Networks and Computer Security
Another 300/-400-level CMPS, ECE or MATH elective may be taken with the consent of a program advisor.

4. Required Cognate Courses (30 units)
PHIL 316 – Professional Ethics (Theme 2)
MATH 201 – Calculus I OR MATH 231 – Calculus I for Engineering
MATH 202 – Calculus II OR MATH 232 – Calculus II for Engineering
MATH 203 – Calculus III OR MATH 233 – Calculus III for Engineering
MATH 330 – Linear Algebra OR MATH 230 – Linear Algebra for Engineering
MATH 340 – Probability Theory

5. **Global Intelligence and National Security (GINS) Cognate Courses (30 units)**
   PLSI 304 – International Relations (Theme 3)
   CRJU 440 – Terrorism
   One GINS Intelligence Analytical Tools course selected from the following list:
   GEOL 450 – Geographical Information Systems for Natural Sciences
   CRJU 494 – Profiling Violence (Theme 3)
   *Another GINS Intelligence Analytical Tools course may be used with the consent of a program advisor.*
   *If a Geographical Information Systems (GIS) Tools course is not available, CMPS 371, CMPS 471, ECE 446, or ECE 447 may be substituted for the GIS course.*
   At least 15 units of GINS Focus Area courses selected from the following list:
   Up to 10 units of GINS strategic language courses.
   HIST 325 – History of European Colonialism (Theme 2)
   HIST 340 – Latin America
   HIST 358 – America’s Rise to Globalism
   HIST 413 – The Middle East in World History
   HIST 426 – China since 1800
   PLSI 302 – American Foreign Policy
   PLSI 303 – Global Security Issues
   PLSI 308 – Government and Politics of China (Theme 3)
   PLSI 309 – Government and Politics of Latin America
   PLSI 323 – Government and Politics of the Middle East
   PLSI 328 – Media, Propaganda, and Public Option (Theme 3)
   PLSI 376 – Politics of International Terrorism
   SOC 450 – Globalization and Social Change (Theme 3)
   *Other GINS Focus Area courses may be used with the consent of a program advisor.*

6. **General Education Notes for 2013/15 Catalog**
   - The Theme 1 requirement is satisfied for all Computer Science majors.
   - PHIL 316, which is a required cognate course, satisfies the Theme 2 requirement.
   - PLSI 304, which is a required cognate course, satisfies the Theme 3 requirement.
   - MATH 201 and above satisfies the Area B4 requirement.
   - Area B2 is waived for Computer Science majors.
   - US History double-counts for 5 units of Area C for Computer Science majors.
   - ABET student outcomes 3c and 3h waive 5 units of Area D for Computer Science majors.