GENERAL CURRICULUM IN COMPUTER SCIENCE

Select from the lisbelow ^{1,2}	sts in Technical Electives Guidelines	20
Mathematics/Sta	tistics Elective	
Select from the fo	ollowing:	4
MATH 241	Calculus IV	
MATH 248	Methods of Proof in Mathematics	
MATH 306	Linear Algebra II	
MATH 334	Combinatorial Math	
MATH 335	Graph Theory	
MATH 437	Game Theory	
MATH 470	Selected Advanced Topics	
STAT 305	Introduction to Probability and Simulation	
STAT 323	Design and Analysis of Experiments I	
STAT 324	Applied Regression Analysis	
STAT 330	Statistical Computing with SAS	
STAT 331	Statistical Computing with R	
STAT 334	Applied Linear Models	
STAT 416	Statistical Analysis of Time Series	
STAT 418	Categorical Data Analysis	
STAT 419	Applied Multivariate Statistics	
STAT 434	Statistical Learning: Methods and Applications	
STAT 434	5	

Total units

1 Consultation with advisor is recommended prior to selecting technical electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

2 An additional 4 units of CPE/CSC Technical Electives is needed if CPE/CSC 123 (http://catalog.calpoly.edu/search/?P=CSC%20123) is not taken in the major.

Technical Electives Guidelines

Courses used to satisfy any other Major, Support, or General Education requirement are not allowed to count toward the Technical Electives Elective requirement. Credit/No Credit grading is not allowed.

Select Technical Electives from the following: ^{1,}	2
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	CSC 305	Individual Software Design and Development	
	CSC 309	Software Engineering II	
	CSC 313	Teaching Computing	
	CSC 321	Introduction to Computer Security	
	CSC 323	Cryptography Engineering	
	CSC 325	Introduction to Privacy: Policy and Technology	
	CSC 344	Music Programming	
	CSC 366	Database Modeling, Design and Implementation	

CSC 369	Introduction to Distributed Computing
CSC 371	Game Design
CSC 377	Introduction to Mixed Reality
CSC 378	Interactive Entertainment
	Engineering
CSC 400	Special Problems ²
CSC 402	Software Requirements Engineering
CSC 405	Software Construction
CSC 406	Senior Project - Software Deployment
CSC 409	Current Topics in Software
	Engineering
CSC 410	Software Evaluation
CSC 421	Binary Exploitation: Tools and Techniques
CSC 422	Network Security
CSC 424	Software Security
CSC/CPE 425	Wireless Security
CSC 429	Current Topics in Computer Security
CSC 431	Compiler Construction
CSC 436	Mobile Application Development
CSC 437	Dynamic Web Development
CSC 448	Bioinformatics Algorithms
CSC/CPE 454	Implementation of Operating Systems
CSC/CPE 458	Current Topics in Computer Systems
CSC 466	Knowledge Discovery from Data
CSC 468	Database Management Systems Implementation
CSC/CPE 469	Distributed Systems
CSC/CPE 471	Introduction to Computer Graphics
CSC 473	Advanced Rendering Techniques
CSC 474	Computer Animation
CSC/CPE 476	Real-Time 3D Computer Graphics Software
CSC 477	Scientific and Information
	Visualization
CSC 478	Current Topics in Computer Graphics
CSC 480	Artificial Intelligence
CSC 481	Knowledge Based Systems
CSC 482	Speech and Language Processing
CSC 484	User-Centered Interface Design and Development
CSC 486	Human-Computer Interaction Theory and Design
CSC 487	Deep Learning
CSC 490	Selected Advanced Topics ²
CSC 493	Cooperative Education Experience ²
CSC 496	Selected Advanced Laboratory ²
CSC 508	Software Engineering I
CSC 509	Software Engineering II
CSC 513	Computing Education Research and Practice
CSC/CPE 515	Computer Architecture

CSC 521	Computer Security	CSC 378	Interactive Entertainment
CSC 522	Advanced Network Security		Engineering
CSC 524	System Security	CSC 402	Software Requirements Engineering
CSC 530	Languages and Translators	CSC 405	Software Construction
CSC 540	Theory of Computation II	CSC 406	Senior Project - Software Deployment
CSC 549	Advanced Algorithm Design and Analysis	CSC 409	Current Topics in Software Engineering
CSC 550	Operating Systems	CSC 410	Software Evaluation
CSC 560	Database Systems	CSC 421	Binary Exploitation: Tools and
CSC/CPE 564	Computer Networks: Research Topics		Techniques
CSC 566	Topics in Advanced Data Mining	CSC 422	Network Security
CSC/CPE 569	Distributed Computing	CSC 424	Software Security
CSC 570	Current Topics in Computer Science	CSC/CPE 425	Wireless Security
CSC 572	Computer Graphics	CSC 429	Current Topics in Computer Security
CSC 580	Artificial Intelligence	CSC 437	Dynamic Web Development
CSC 581	Computer Support for Knowledge	CSC 448	Bioinformatics Algorithms
CSC 582	Management Computational Linguistics	CSC/CPE 454	Implementation of Operating Systems
CSC 587	Advanced Deep Learning	CSC 466	Knowledge Discovery from Data
CPE 315	Computer Architecture	CSC 468	Database Management Systems
CPE 316	Microcontrollers and Embedded		Implementation
	Applications	CSC 473	Advanced Rendering Techniques
CPE/PHYS 345	Quantum Computing	CSC 474	Computer Animation
CPE 400	Special Problems for Undergraduates	CSC/CPE 476	Real-Time 3D Computer Graphics Software
CPE 416	Autonomous Mobile Robotics	CSC 477	Scientific and Information
CPE 419	Applied Parallel Computing		Visualization
CPE/EE 428	Computer Vision	CSC 478	Current Topics in Computer Graphics
CPE/EE 442	Real Time Embedded Systems	CSC 480	Artificial Intelligence
CPE 464	Introduction to Computer Networks	CSC 481	Knowledge Based Systems
CPE 465	Advanced Computer Networks	CSC 482	Speech and Language Processing
CPE 488	Microelectronics and Electronics Packaging	CSC 484	User-Centered Interface Design and Development
DATA 301	Introduction to Data Science	CSC 486	Human-Computer Interaction Theory
The following restri	ctions must be satisfied.	000 407	and Design
4 units must be sat	isfied by a course that has as a	CSC 487	Deep Learning
prerequisite either		CSC 493	Cooperative Education Experience
	ion course required by the major	CSC 508 CSC 509	Software Engineering I
(excluding CSC 3		CSC/CPE 515	Software Engineering II Computer Architecture
2) Another Techr		CSC 521	Computer Security
·	has CSC 202 or CSC 203 listed as a	CSC 521	Advanced Network Security
prerequisite		CSC 522	Languages and Translators
Select from the foll	-	CSC 540	Theory of Computation II
CSC 305	Individual Software Design and Development	CSC 549	Advanced Algorithm Design and
CSC 313	Teaching Computing	000 550	Analysis
CSC 325	Introduction to Privacy: Policy and Technology	CSC 550 CSC 560	Operating Systems Database Systems
CSC 366	Database Modeling, Design and	CSC/CPE 564	Computer Networks: Research Topics
000.000	Implementation	CSC 566	Topics in Advanced Data Mining
CSC 369	Introduction to Distributed	CSC 572	Computer Graphics
CSC 371	Computing Game Design	CSC 580	Artificial Intelligence
CSC 377	Introduction to Mixed Reality	CSC 581	Computer Support for Knowledge
030 311	introduction to mixed fieldity		Management

CSC 582	Computational Linguistics		STAT 331	Statistical Comp
CSC 587	Advanced Deep Learning		STAT 334	Applied Linear M
CPE 315	Computer Architecture		STAT 416	Statistical Analys
CPE 416	Autonomous Mobile Robotics		STAT 418	Categorical Data
CPE 465	Advanced Computer Networks		STAT 419	Applied Multivari
DATA 301	Introduction to Data Science		STAT 434	Statistical Learni
Jp to 4 units may be	e taken from the Approved External			Applications
Electives listed belo	W:	1	A total of 20 Too	hnical Elective uni
AERO 450	Introduction to Aerospace Systems Engineering		and graduate CS	SC and CPE course
ART 376	The Art of Mixed Reality			units of CPE/CSC 1
ART 384	Digital 3D Modeling and Design			not taken in the m
BUS 310	Introduction to Entrepreneurship	2	Up to a combine	ed 4 units may be t
CHEM 216	Organic Chemistry I		CSC 490, CSC 49	93, or CSC 496.
CHEM 217	Organic Chemistry II			
CHEM 218	Organic Chemistry III			
CHEM 312	Organic Chemistry: Fundamentals and Applications			
ECON 339	Econometrics			
EE 201	Electric Circuit Theory			
& EE 251	and Electric Circuits Laboratory			
EE 314	Introduction to Communication Systems			
EE/CPE 336	Microprocessor System Design			
EE 424	Introduction to Remote Sensing			
ENVE 542	Sustainable Environmental Engineering			
IME 301	Operations Research I			
IME 314	Engineering Economics			
IME 315	Financial Decision Making for Engineers			
IME 356	Manufacturing Automation			
IME 403	Software Product Management			
MATH 241	Calculus IV			
MATH 242	Differential Equations I			
MATH 248	Methods of Proof in Mathematics			
MATH 341	Theory of Numbers			
MATH 350	Mathematical Software			
MATH 412	Introduction to Analysis I			
ME 211	Engineering Statics			
ME 212	Engineering Dynamics			
ME 405	Mechatronics			
PHIL 412	Epistemology			
PHIL 422	Philosophy of Mind			
PHYS 211	Modern Physics I			
PSY 329	Research Methods in Psychology			
PSY 333	Quantitative Research Methods for the Behavioral Sciences			
PSY 357	Cognition			
STAT 305	Introduction to Probability and			
	Simulation			
STAT 323	Design and Analysis of Experiments I			
STAT 324	Applied Regression Analysis			
STAT 330	Statistical Computing with SAS			

STAT 331	Statistical Computing with R
STAT 334	Applied Linear Models
STAT 416	Statistical Analysis of Time Series
STAT 418	Categorical Data Analysis
STAT 419	Applied Multivariate Statistics
STAT 434	Statistical Learning: Methods and Applications

nits selected from upper-division ses open to those in the major and jor. Technical Electives is needed if major.

taken from CSC 400, CPE 400,