

Computing Programs in College of Engineering at Cal Poly State University

All three programs:

- Required many of the same first year courses to facilitate transfer among the three programs
- Provide experience with projects similar to those done in industry
- Emphasize courses with a lab component to reinforce theory and concepts presented and discussed in lecture
- Emphasize a solid math and theoretical background in basic concepts of the field

	Computer Science	Software Engineering	Computer Engineering																																																						
Focus	<ul style="list-style-type: none"> • Fundamentals of computing • How computer systems work (software emphasis) • In-depth knowledge of at least one core area (e.g., databases, networks, artificial intelligence, graphics) 	<ul style="list-style-type: none"> • How to design and build complex, highly reliable software applications • Management issues including teamwork and project management 	<ul style="list-style-type: none"> • How hardware and software work together to make a computer • Special purpose computers for specific applications 																																																						
Curriculum Emphasis (Simplified)	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Hardware Systems Applications</td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td></td> <td></td> </tr> <tr> <td>Management/Leadership</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Technical Electives</td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td></td> </tr> </table>	Hardware Systems Applications						Management/Leadership						Technical Electives						<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Hardware Systems Applications</td> <td style="background-color: #00FF00;"></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Management/Leadership</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Technical Electives</td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td></td> </tr> </table>	Hardware Systems Applications						Management/Leadership						Technical Electives						<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Hardware Systems Applications</td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> </tr> <tr> <td>Management/Leadership</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Technical Electives</td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td style="background-color: #00FF00;"></td> <td></td> </tr> </table>	Hardware Systems Applications						Management/Leadership						Technical Electives					
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Example Applications	Database/web programming Operating systems Graphics programming Technical marketing	Management systems Database programming Aerospace Web programming	Robotics Sensor networks Smart devices																																																						
Example Job Titles	Programmer/analyst Network engineer Software engineer Quality assurance engineer	Software engineer Systems engineer Systems analyst Quality assurance engineer	Systems engineer Embedded software engineer Digital systems engineer Systems software engineer																																																						