



College of Computing and Software Engineering Major Comparison Chart

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BS Computer Science	BS Software Engineering	BS Computer Game Design & Development	BS Information Technology	BAS Information Technology (transfers only)
CS	SWE	CGDD	IT	BASIT

Depth covered: □ Introductory Level | ■ Advanced Level | ◇ Elective | △ Advanced as elective

Topics Covered	Programming	■	■	■	□	□
	Operating Systems Design	■	■	◇		
	Operating Systems Administration	□	□		□	□
	Computer Architecture	■	■	◇	□	□
	Databases	□ & ◇	□	◇	□ & △	□ & △
	Networking	□ & △	□	◇	■ & △	■ & △
	Information Security	◇	◇		■ & △	■ & △
	Project Management		■	◇	■	■
	Software Design	□	■	◇		◇
	Software Testing/Quality Assurance	◇	■	□		
	Web Development	◇			■ & △	■ & △
	Digital Media		◇	■		
	Artificial Intelligence	◇	◇	■		
	Technical Writing	□	□		□	□
	Advanced Math	□	□			
	User/Client Interaction or Support	◇	□ & △	■	■	■
	Game Theory/Development	◇	◇	■	◇	
	Mobile Technology	◇		□	◇	

Note: The BAS in Information Technology program is only available to those students who have earned an Associate of Applied Science degree.

Program Concentrations

Concentrations within programs are meant to provide additional expertise and knowledge in particular fields in industry to enhance and give focus to programs that cover a broad variety of topics. CCSE has three programs that include concentrations.

Computer Science, Software Engineering, and the BASIT program do not have concentrations.

Applied Computer Science	Computer Game Design & Development	Information Technology
<p><i>All concentrations within the ACS program include completing an interdisciplinary minor.</i></p> <ul style="list-style-type: none"> • Data Mining, Applied Statistics, and High Performance Computing • High Performance Computing • Interdisciplinary Applied Computing • Computing and Information Systems • Computing and the Sciences • Custom Concentration <ul style="list-style-type: none"> ○ Must be approved <p>As computing is a ubiquitous profession, this program focuses on integrating computing concepts into various other fields. Two years of a foreign language are also required.</p>	<p><i>Concentrations within the CGDD program consist of 3 elective courses, which focus on additional concepts and skills utilized in industry today.</i></p> <ul style="list-style-type: none"> • Media & Production • Distributed & Mobile • Educational & Serious • Planning & Management • Simulations & Informatics • Creative Content Generation <ul style="list-style-type: none"> ○ Audio production & technology • Computer Science <ul style="list-style-type: none"> ○ Comprised of Computer Science electives chosen by student 	<p><i>Concentrations within the IT program consist of 4 electives, with the option of utilizing an internship experience in industry as one of those electives.</i></p> <ul style="list-style-type: none"> • Enterprise Systems <ul style="list-style-type: none"> ○ Focuses on system administration skills • Information Assurance and Security <ul style="list-style-type: none"> ○ Includes ethical hacking, computer forensics, & wireless security • Health Information Technology <ul style="list-style-type: none"> ○ Introduction to the healthcare industry and technology used today for support • Mobile & Web Development <ul style="list-style-type: none"> ○ Mobile systems/software and advanced web development concepts and skills

Sample Computing Jobs

Computer Programmer	Computer programmers write code to create software programs. They turn the program designs created by software developers and engineers into instructions that a computer can follow.
Database Administrator	Database administrators (DBAs) use specialized software to store and organize data, such as financial information and customer shipping records. They make sure that data are available to users and are secure from unauthorized access.
Network and Computer Systems Administrator	Computer networks are critical parts of almost every organization. Network and computer systems administrators are responsible for the day-to-day operation of these networks.
Software Engineers	Software developers are the creative minds behind computer programs. Some develop the applications that allow people to do specific tasks on a computer or other device. Others develop the underlying systems that run the devices or control networks.
Web Developer	Web developers design and create websites. They are responsible for the look of the site. They are also responsible for the site's technical aspects, such as performance and capacity, which are measures of a website's speed and how much traffic the site can handle. They also may create content for the site.
Video Game Programmer	Game Programmers work at the heart of the game development process. They design and write the computer code that runs and controls the game, incorporating and adapting any ready-made code libraries and writing custom code as required. They test the code and fix bugs, and develop customized tools for use by other members of the development team.
Information Security Analyst	Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.
Android Developer	Android software developers are in charge of creating effective mobile applications for their organization on the Android platform. They create software designed to meet company objectives and provide excellent customer satisfaction. They evaluate frameworks to decide which will produce the best results using fewer resources. They also create highly scalable software systems for increased efficiency.