TIFFIN UNIVERSITY

ACADEMIC PATHWAY

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

What is Computer Science?

Computer science is a dynamic and ever-evolving field that revolves around the study of computers, computational systems and the intricate world of software. The field has a focus not only on the hardware aspects of computing but also extensively on the design, development and application of software. This discipline is at the forefront of technological innovation, driving advancements that impact various industries and aspects of daily life.

Within the expansive realm of computer science, several key areas of study contribute to a well-rounded understanding of the discipline. Some of these areas include artificial intelligence (AI), computer networks, database systems, human-computer interaction, algorithms, programming languages, the software development process, cloud-based systems and project management.

As technology advances, computer science remains at the forefront of innovation. Graduates in this field are equipped not only with technical skills but with the critical thinking and problem-solving abilities necessary to address the evolving challenges of the digital era. Whether working on developing cutting-edge AI applications, setting up a network system to support software or optimizing databases for efficient data management, computer scientists play a pivotal role in shaping the future of technology and its impact on society.

Why study Computer Science?

A college student should consider studying computer science for its unparalleled versatility and the limitless opportunities it unlocks in today's technologically driven world. With the increasing integration of technology in every aspect of our lives, from business to healthcare, a background in computer science equips students to innovate and contribute meaningfully to diverse fields. The demand for skilled computer science graduates is consistently high, offering graduates a wide array of rewarding career paths and competitive salaries. Additionally, the dynamic nature of the field ensures that students engage with cutting-edge technologies, fostering adaptability and lifelong learning—a crucial asset in an ever-evolving job market. Ultimately, studying computer science not only opens doors to a spectrum of exciting opportunities but empowers individuals to shape the future through technological advancements and innovations.

What can I do with a Computer Science degree?

The Bureau of Labor and Statistics lists the following as different areas for positions within the field (as of 2022):

Specific roles may include:

- Web Developers and Digital Designers
- Software Developers, Quality Assurance Analysts and Testers
- Network and Computer Systems Administrators
- Information Security Analysts
- Database Administrators and Architects
- Computer Systems Analysts
- Computer Programmers
- Computer Network Architects
- Computer and Information Research Scientists

Because the field is growing so fast and is a new field of study (compared to degrees such as accounting, psychology etc.) there is not much need for a graduate degree within the field. This could change as the degree matures, and so one may pursue a Master of Science in computer science. Additionally, for further specialization, graduates might consider pursuing graduate programs in areas like cybersecurity, data science, artificial intelligence and software engineering, enabling them to delve deeper into specific fields of interest within technology. If the student is looking at entering the education or research field, a graduate degree will be required.

SCHOOL OF SCIENCE TECHNOLOGY AND HEALTH

How much will I earn with a Computer Science degree?

The Bureau of Labor and Statistics lists the following as median pay (as of 2022) for positions within the field:

- **Web Developers and Digital Designers: $80,730**
- **Software Developers, Quality Assurance Analysts and Testers: $124,200**
- **Network and Computer Systems Administrators: $90,520**
- **Information Security Analysts: $112,000**
- **Database Administrators and Architects: $112,120**
- **Computer Systems Analysts: $102,240**
- **Computer Programmers: $97,800**
- **Computer Network Architects: $126,900**
- **Computer and Information Research Scientists: $136,620**

What is your pathway to graduation?

At Tiffin University we have five concentrations within the Bachelor of Science in computer science. These concentrations align with the careers listed above (except a research scientist, which would require a graduate degree).

The concentrations are:

- **Network and Systems Administration**
- **Software Development**
- **Video Game Design**
- **Web Design**
- **Unmanned Arial Systems**

Below are the pathways for each concentration:

SOFTWARE DEVELOPMENT CONCENTRATION			
FRESHMAN SEMESTER 1	**FRESHMAN SEMESTER 2**	**SOPHOMORE SEMESTER 1**	**SOPHOMORE SEMESTER 2**
DLT101	CST155	DEC200	MAT287
DEC100	CST285	CST201	CST251 Concentration SD
COM130	NAT130	CST230	CST212
MAT181	ENG142	OE	BIA290 Concentration SD
ENG141	MAT273	CST255 Concentration SD	CDS244
JUNIOR SEMESTER 1	**JUNIOR SEMESTER 2**	**SENIOR SEMESTER 1**	**SENIOR SEMESTER 2**
DEC300	CST365	DEC400	CST460
CST280	CST320	CDS424	CST470
CST360	CST312 Concentration SD	CDS345	CST412
Pick List Credit (ART/ENG/CUL)	CST380 Concentration SD	OE	OE
OE	OE	CST450 Concentration SD	OE

NETWORK & SYSTEMS ADMINISTRATION			
FRESHMAN SEMESTER 1	**FRESHMAN SEMESTER 2**	**SOPHOMORE SEMESTER 1**	**SOPHOMORE SEMESTER 2**
DLT101	CST155	DEC200	MAT287
DEC100	CST285	CST201	CDS244
COM130	NAT130	CST230	CST212
MAT181	ENG142	Pick List Credit (ART/ENG/CUL)	CST251 Concentration NSA
ENG141	MAT273	OE	CST330 Concentration NSA
JUNIOR SEMESTER 1	**JUNIOR SEMESTER 2**	**SENIOR SEMESTER 1**	**SENIOR SEMESTER 2**
DEC300	CST365	DEC400	CST460
CST280	CST320	CDS424	CST470
CST360	CST430 Concentration NSA	CDS345	CST412
CST345 Concentration NSA	CST325 Concentration NSA	OE	OE
OE	OE	CST445 Concentration NSA	OE

VIDEO GAME DESIGN CONCENTRATION			
FRESHMAN SEMESTER 1	**FRESHMAN SEMESTER 2**	**SOPHOMORE SEMESTER 1**	**SOPHOMORE SEMESTER 2**
DLT101	CST155	DEC200	MAT287
DEC100	CST285	CST201	CST251 Concentration VGD
COM130	NAT130	CST230	CST212
MAT181	ENG142	OE	GDM I Concentration VGD
ENG141	MAT273	CST255 Concentration VGD	CDS244
JUNIOR SEMESTER 1	**JUNIOR SEMESTER 2**	**SENIOR SEMESTER 1**	**SENIOR SEMESTER 2**
DEC300	CST365	DEC400	CST460
CST280	CST320	CDS424	CST470
CST360	GDM III Concentration VGD	CDS345	CST412
CST450 Concentration VGD	Pick List Credit (ART/ENG/CUL)	GDM V Concentration VGD	GDM VI Concentration VGD
GDM II Concentration VGD	OE	OE	OE

WEB DESIGN CONCENTRATION			
FRESHMAN SEMESTER 1	**FRESHMAN SEMESTER 2**	**SOPHOMORE SEMESTER 1**	**SOPHOMORE SEMESTER 2**
DLT101	CST155	DEC200	MAT287
DEC100	CST285	CST201	CDS244
COM130	NAT130	DMD134 Concentration WD	CST212
MAT181	ENG142	OE	WDM I Concentration WD
ENG141	MAT273	CST255 Concentration WD	CST230
JUNIOR SEMESTER 1	**JUNIOR SEMESTER 2**	**SENIOR SEMESTER 1**	**SENIOR SEMESTER 2**
DEC300	CST365	DEC400	CST460
CST280	CST320	CDS424	CST470
CST360	ART324 Concentration WD	CDS345	CST412
Pick List Credit (ART/ENG/CUL)	WDM II Concentration WD	OE	OE
OE	OE	WDM III Concentration WD	OE

UNMANNED AIRCRAFT SYSTEMS CONCENTRATION			
FRESHMAN SEMESTER 1	**FRESHMAN SEMESTER 2**	**SOPHOMORE SEMESTER 1**	**SOPHOMORE SEMESTER 2**
DLT101	CST155	DEC200	MAT287
DEC100	CST285	CST201	CST251 Concentration UAS
COM130	NAT130	CST230	CST212
MAT181	ENG142	OE	UAS225 Concentration UAS
ENG141	MAT273	UAS150 Concentration UAS	CDS244
JUNIOR SEMESTER 1	**JUNIOR SEMESTER 2**	**SENIOR SEMESTER 1**	**SENIOR SEMESTER 2**
DEC300	CST365	DEC400	CST460
CST280	CST320	CDS424	CST470
CST360	CST312 Concentration UAS	CDS345	CST412
Pick List Credit (ART/ENG/CUL)	DMD230 Concentration UAS	OE	OE
OE	OE	UAS350 Concentration UAS	OE

Can I choose a minor?

MINOR OPTIONS			
CYBER SECURITY		DIGITAL FORENSICS	
COURSE NAME	CREDITS	COURSE NAME	CREDITS
CDS152 Introduction to Cyber Defense	3	CDS152 Introduction to Cyber Defense	3
CDS244 Cyber Security	3	CDS334 Technology and Crime	3
CDS345 Cyber Law and Ethics	3	CDS345 Cyber Law and Ethics	3
CDS355 Penetration Testing and Vulnerability Analysis	3	CDS348 Incident Management	3
CDS444 Wireless Security	3	CDS351 Survey of Computer Forensics	3
CDS445 Cyber Warfare	3	CDS435 Advanced Digital Forensics	3

Enhance your degree with a designation.
The computer science field designations come through certifications. Below are courses within the Bachelor of Science and certifications within the course (meaning students will have the opportunity to take the certification as a final exam within the course but, are not required to pass the certification (for seated classes only. Online classes can attempt the certifications):

- **CST255 Internet and Website Design:** Information Technology Specialist (ITS) certification in HTML and CSS
- **CST251 Advanced Programming Concepts:** Information Technology Specialist (ITS) certification in the Python
- **CST380 Database II:** Information Technology Specialist (ITS) certification in database
- **CST445 Cloud Administration:** Information Technology Specialist (ITS) certification in Cloud Computing

Below are other certifications students prepare for in their course work and can take on their own:

- **CST450 Programming for Application Development:** Information Technology Specialist (ITS) certification in Software or Information Technology Specialist (ITS) certification in JAVA programming
- **CST345 Server Administration:** Information Technology Specialist (ITS) certification in Device Configuration and Management
- **CST412 IT Project Management:** Certified associate in project management (CAPM)
- **CST330 Network Infrastructure I:** CompTIA Network+
- **CST430 Network Infrastructure II:** CCNA Exam offered by Cisc

Stay on track!

YEAR 1

- Join the Technology Club which is a chapter of the Association of Computing Machinery (ACM) professional organization and attend club events.
- Meet with your faculty advisor and professional advisor each term for guidance.
- Go to class every day.
- Complete all assignments by their due date and request help early (tutoring and/or faculty guidance) if you are not understanding the assignment.
- Attend the meet-and-greet put on by the computer science faculty
- Get involved in campus activities.
- Work on soft skills such as organizational skills, communication skills, time management skills etc.

YEAR 2

- Start to look for internship possibilities.
- Meet with your faculty advisor and professional advisor each term for guidance.
- Go to class every day.
- Complete all assignments by their due date and request help early (tutoring and/or faculty guidance) if you are not understanding the assignment.
- Get involved in campus activities.
- Work on soft skills such as organizational skills, communication skills, time management skills etc.

YEAR 3

- Obtain another outside professional certification not provided per required courses.
- Meet with your faculty advisor and professional advisor each term for guidance.
- Go to class every day.
- Complete all assignments by their due date, and request help early (tutoring and/or faculty guidance) if you are not understanding the assignment.
- Apply for internships six months prior to the term you desire to complete the internship.
- Get involved in campus activities.
- Work on soft skills such as organizational skills, communication skills, time management skills etc.

YEAR 4

- Fill out Graduation Application.
- Meet with your faculty advisor and professional advisor each term for guidance.
- Make an appointment with Career Services to get help creating/polishing your resume.
- Go to class every day.
- Complete all assignments by their due date and request help early (tutoring and/or faculty guidance) if you are not understanding the assignment.
- Get involved in campus activities.
- Work on your soft skills such as organizational skills, communication skills, time management skills etc.
- Start applying for positions in the field as you approach graduation and watch for emails from the computer science faculty on local job position opportunities.

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