



**2021-2022 Catalog**  
**First Addenda/Errata**  
**July 2021**

**The following is added to/replaces information listed on pages 204:**

**Certificate of Achievement:  
Computer Programming**

This award prepares students for entry-level employment in the field of information technology (IT). It is designed to provide students with training in the theory and practice of computer programming emphasizing business and computer applications. Students receive hands-on experience in the fundamentals of structured- and object-oriented analysis, design, and implementation of popular computer programming languages, such as Python, C++, and Java.

**Career Options**

Some careers in computer programming require education beyond the associate degree. Careers in computer programming include: junior programmer, senior programmer, software developer, quality analyst, game programmer, software developer engineer, C++ analyst, backend developer, embedded engineer, and database developer.

<b>Courses Required for the Major:</b>		<b>Units</b>
CISC 179	Python Programming	4
CISC 183	Web Development with Ruby on Rails	4
<b>or</b>		
CISC 193	Microsoft C# Software Engineering 1	4
CISC 187	Data Structures in C++	4
CISC 190	Java Programming	4
CISC 192	C/C++ Programming	4
CISC 201	Advanced C++ Programming	4
CISC 205	Object Oriented Programming using C++	4
<b>Total Units = 28</b>		

**The following is added to/replaces information listed on pages 205:**

**Certificate of Achievement:  
Network Security II**

The Certificate of Achievement in Network Security II provides students with the intermediate-level skills to apply behavioral analytics to networks and devices to prevent, detect, and combat cybersecurity threats through continuous security monitoring. This curriculum includes hands-on experience in virtual environments that simulate real-world scenarios in threat and vulnerability management, compliance and assessment, and incident response. This pathway includes preparation for industry-recognized certifications geared towards preparing students for a successful career in IT roles that are vital for building, protecting, and maintaining information and technology assets.

**Career Options**

Some careers in the cybersecurity field require education beyond the associate degree in either Cybersecurity or Information Assurance. Careers in the cybersecurity or information assurance field include: information security consultant, security administrator, security analyst, security engineer, security auditor, incident responder, penetration tester, vulnerability assessor, support technician, systems administrator, network administrator, and network specialist.

<b>Courses Required for the Major:</b>		<b>Units</b>
INWT 120	Network+ Certification Training	4
INWT 140	Security+ Certification Training	3
INWT 145	Linux+ Certification Training	4
INWT 170	Cybersecurity Analyst+ (CySA+) Certification Training	3
INWT 200	Ethical Hacking and Penetration Testing	4
<b>Total Units = 18</b>		

**The following is added to/replaces information listed on pages 206:**

**Associate of Science Degree:  
Computer Programming**

This award prepares students for entry-level employment in the field of information technology (IT). It is designed to provide students with training in the theory and practice of computer programming emphasizing business and computer

applications. Students receive hands-on experience in the fundamentals of structured- and object-oriented analysis, design, and implementation of popular computer programming languages, such as Python, C++, and Java.

### Career Options

Some careers in computer programming require education beyond the associate degree. Careers in computer programming include: junior programmer, senior programmer, software developer, quality analyst, game programmer, software developer engineer, C++ analyst, backend developer, embedded engineer, and database developer.

<b>Courses Required for the Major:</b>		<b>Units</b>
CISC 179	Python Programming	4
CISC 183	Web Development with Ruby on Rails	4
<b>or</b>		
CISC 193	Microsoft C# Software Engineering 1	4
CISC 187	Data Structures in C++	4
CISC 190	Java Programming	4
CISC 192	C/C++ Programming	4
CISC 201	Advanced C++ Programming	4
CISC 205	Object Oriented Programming using C++	4
<b>Total Units = 28</b>		

**Note:** The Computer Information Systems Department requires studies to complete all course requirements for the degree within five years.

**The following is added to/replaces information listed on pages 317-318:**

### Certificate of Achievement: Communications Technician Apprenticeship

Prepares student for employment as a Communications Technician with the City of San Diego.

<b>Courses Required for the Major:</b>		<b>Units</b>
ELDT 123	Introduction to Digital Circuits	3
ELDT 123L	Digital Circuits Laboratory	1
ELDT 124	Basic DC Electronics	4
ELDT 124L	Basic DC Laboratory	1
ELDT 143	Semiconductor Devices	3
ELDT 143L	Semiconductor Devices Laboratory	1.5
ELDT 144	OP-AMPS, Sensors and Computers	3
ELDT 144L	OP-AMPS and Sensors Laboratory	1.5
<b>ELDT 225</b>	<b>Microcontrollers</b>	<b>3</b>
<b>ELDT 225L</b>	<b>Microcontrollers Laboratory</b>	<b>1.5</b>
<del>ELDT 224</del>	<del>Microprocessor Design</del>	<del>3</del>

<del>ELDT 224L</del>	<del>Microprocessor Design Laboratory</del>	<del>1.5</del>
ELDT 228	Communication Circuits	3
ELDT 228L	Communication Circuits and Certification Laboratory	1
ELDT 229	Advanced Telecommunications Networks	3
ELDT 229L	Advanced Telecommunications Networks Laboratory	1
<del>ELDT 230</del>	<del>Advanced Computer Designs</del>	<del>3</del>
<del>ELDT 230L</del>	<del>Advanced Computer Designs Laboratory</del>	<del>1</del>
<b>ELDT 232</b>	<b>Advanced Computer Design and Interfacing</b>	<b>4</b>
<b>ELDT 232L</b>	<b>Advanced Computer Designs Laboratory</b>	<b>1.5</b>
<b>Total Units = 34.5</b>		<b>36</b>

### Associate of Science Degree: Communications Technician Apprenticeship

Prepares student for employment as a Communications Technician with the City of San Diego.

<b>Courses Required for the Major:</b>		<b>Units</b>
ELDT 123	Introduction to Digital Circuits	3
ELDT 123L	Digital Circuits Laboratory	1
ELDT 124	Basic DC Electronics	4
ELDT 124L	Basic DC Laboratory	1
ELDT 143	Semiconductor Devices	3
ELDT 143L	Semiconductor Devices Laboratory	1.5
ELDT 144	OP-AMPS, Sensors and Computers	3
ELDT 144L	OP-AMPS and Sensors Laboratory	1.5
<b>ELDT 225</b>	<b>Microcontrollers</b>	<b>3</b>
<b>ELDT 225L</b>	<b>Microcontrollers Laboratory</b>	<b>1.5</b>
<del>ELDT 224</del>	<del>Microprocessor Design</del>	<del>3</del>
<del>ELDT 224L</del>	<del>Microprocessor Design Laboratory</del>	<del>1.5</del>
ELDT 228	Communication Circuits	3
ELDT 228L	Communication Circuits and Certification Laboratory	1
ELDT 229	Advanced Telecommunications Networks	3
ELDT 229L	Advanced Telecommunications Networks Laboratory	1
<del>ELDT 230</del>	<del>Advanced Computer Designs</del>	<del>3</del>
<del>ELDT 230L</del>	<del>Advanced Computer Designs Laboratory</del>	<del>1</del>
<b>ELDT 232</b>	<b>Advanced Computer Design and Interfacing</b>	<b>4</b>
<b>ELDT 232L</b>	<b>Advanced Computer Designs Laboratory</b>	<b>1.5</b>
<b>Total Units = 34.5</b>		<b>36</b>

Additional general education and graduation requirements for the associate degree are listed in the Academic Requirements section of catalog. **The associate degree requires a minimum of 60 units.**

**Recommended electives:** Electronic Systems 126, 126L, 198, 227, 227L.