

# PROGRAMMING ESSENTIALS



## ABOUT THIS PROGRAM

### ANCHORED IN TECH CORE



Prepare to be immersed in coursework designed to help you build interdisciplinary skills you'll need for today's Internet of Things (IoT) economy. Project work and activities allow you to develop relevant skills in:

- Programming
- Operating Systems

### IS THIS PROGRAM FOR YOU?

If you want to develop software applications and programs that businesses and consumers use every day, this may be the certificate program for you.

### A PROGRAM TO FUEL YOUR FUTURE

Learn the skills needed to write code and create applications using the industry recognized Python programming language. This certificate introduces students to essential coding, programming and computing concepts.

## CAREER OPPORTUNITIES

Graduates of DeVry's [Programming Essentials certificate program](#) may consider, but are not limited to, the following careers:

*Entry level opportunities in positions, such as:*

- Coder
- Programmer I
- Information Systems Technician

## QUICK FACTS

**22**  
CREDIT HOURS  
minimum credit hours  
required for graduation

**7**  
COURSES

**8**  
MONTHS  
minimum length for graduation<sup>1</sup>

**\$2,400**

### TECH ESSENTIALS GRANT

With the Tech Essentials Grant, DeVry University offers qualifying students a \$2,400 grant toward the cost of your Programming Essentials Certificate program at the successful completion of your program.<sup>2</sup>



### WORK WITH IOT TECHNOLOGIES & SYSTEMS

Immerse yourself in the Internet of Things (IoT) world and obtain hands-on experience with IoT, cloud, software and security technologies and systems.



### CERTIFICATION EXAM ALIGNED CURRICULUM

Experience elements of our technology curriculum focused on real-world industry standards and prepare for certification opportunities that help validate your knowledge and skills.

- CompTIA Linux+
- CompTIA IT Fundamentals
- PCEP – Certified Entry-Level Python Programmer

<sup>1</sup> Assumes completion of 2 semesters and enrollment in 9-13 credit hours per semester.

<sup>2</sup> <sup>3</sup> The Tech Essentials Grant will be awarded upon completion of the Programming Essentials Certificate program. The grant will be applied to your student account. If a credit is generated, funds may be sent to you unless you have borrowed loans as funding would then be returned to your lender.

# Programming Essentials

## PROGRAM OUTLINE

### MATHEMATICS

MATH114 Algebra for College Students

### TECH CORE

CEIS101C Introduction to Technology and Information Systems

CEIS106 Introduction to Operating Systems

CEIS110 Introduction to Programming

### INFORMATION SYSTEMS AND PROGRAMMING

CEIS150 Programming with Objects

CEIS209 Intermediate Programming

### CAREER PREPARATION

CEIS297 Technology Career Foundations

## WHAT YOU'LL LEARN

### MATHEMATICS

- Analyze data
- Solve problems

### TECH CORE

- Illustrate the basics of computing and explain the value of data and troubleshooting.
- Install and configure operating systems using Command Line Interface (CLI).
- Solve technical problems using an algorithmic approach and basic programming and coding methods.

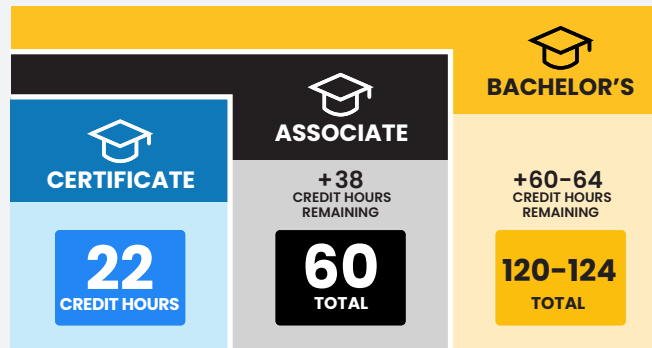
### INFORMATION SYSTEMS AND PROGRAMMING

- Design and implement normalized databases using reports, forms and tables
- Create multiple table systems with multimedia presentations
- Develop applications with .NET, Visual Studio and SQL
- Develop menu-driven programs that update, create and delete data from data stores

### CAREER PREPARATION

- Apply principles of technology in the building, testing, operation and maintenance of connected and distributed digital-based systems and networks

### Earn a credential at every step.



### HOW DO CREDENTIALS STACK?

**Here's an example:** When you earn a Programming Essentials Undergraduate Certificate, all courses you complete in the program apply to your Associate Degree in Information Technology with a specialization in Information Systems Programming. When you complete the associate, all courses stack into either our bachelor's in Computer Information Systems or Software Development with any specialization. Build your confidence – and your resume – when you start your journey at DeVry<sup>3</sup>.

<sup>3</sup>The figures displayed represent the minimum credit hours required for graduation. Additional coursework may be necessary to complete program requirements. At the time of application to the next credential level, an evaluation of qualifying transfer credit will occur and the most beneficial outcome will be applied. Future programmatic changes could impact the application of credits to a future program. Refer to the academic catalog for details.

# Programming Essentials

## RECOMMENDED PLAN OF STUDY

DeVry's Programming Essentials Certificate program is designed to prepare you with the knowledge and skills needed to pursue up to 3 external industry-specific certifications\* within 8 months, should you choose to seek professional certification or licensure exams. Our recommended course sequencing fosters the development of these skills early on and throughout the entire program.

SEMESTER 1		SEMESTER 2		TOTAL:
<b>COURSE</b>	<b>CREDITS</b>	<b>COURSE</b>	<b>CREDITS</b>	
CEIS101C	2	CEIS106	4	
MATH114	4	CEIS110	3	2 SEMESTERS
<b>TOTAL</b>	<b>6</b>	<b>TOTAL</b>	<b>7</b>	8 MONTHS MINIMUM
8 WEEKS 2 MONTHS		8 WEEKS 2 MONTHS		

### 0-4 MONTHS

#### ALIGNED CERTIFICATIONS

CompTIA IT Fundamentals| CompTIA Linux+| Certified Entry Level Python Programmer

- Illustrate the basics of computing and explain the value of data and troubleshooting
- Investigate how to configure a network using the Linux operating system
- Use Python programming to build apps and application frameworks

### 5-8 MONTHS

- Design and implement normalized databases using reports, forms and tables
- Create multiple table systems with multimedia presentations
- Develop applications with .NET, Visual Studio and SQL
- Develop menu-driven programs that update, create and delete data from data stores
- Apply principles of technology in the building, testing, operation and maintenance of connected and distributed digital-based systems and networks

\*Credits and degrees earned from DeVry do not automatically qualify the holder to participate in professional certification or licensure exams. DeVry does not pay or reimburse students enrolled in this program for the cost associated with these external certifications and does not guarantee students will successfully pass such exams.

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