

2021 Professional Development
GACE Computer Science Assessment Preparation Course

Online Course Description

This 30-hour course is designed to help educators prepare for the GACE CS Exam.

Activities

- Video tutorials
- Exercises - multiple-choice, fill in the blank type questions (auto-graded) to reinforce learning
- Mini Labs - coding exercises (auto-graded)
- Forum Discussion

Support

- Get email support by contacting hello@popfizz.io
- Post questions on the [Forum](#).
- Get live chat support by clicking on the chat icon from the Dashboard.

**Course Overview****Unit 1 – About the GACE Assessment – 1 hour**

1. About the exam
2. Test Objectives
3. Exam resources

Unit 2 – Algorithms and Computational Thinking – 5 hours

1. Warm-up exercises
2. Computational Thinking - Abstraction, pattern recognition, problem decomposition
3. Base conversion
4. Algorithm formats
5. Algorithm analysis, searching and sorting algorithms, recursive algorithms, and randomization

Unit 3 – Programming – 6 hours

1. Variables
2. Control structures
3. Operators
4. Classes and objects - Object-oriented concepts

5. Procedures, event-driven programs, usability
6. Data structures
7. Debugging, documenting and reviewing code, libraries and APIs, IDEs, and programming language paradigms

Unit 4 – Data – 3 hours

1. Digitalization, data encryption and decryption, and computational tools
2. Simulation, modeling, and manipulation of data

Unit 5 – Computing Systems and Networks – 3 hours

1. Operating systems, computing systems, communication between devices, and cloud computing
2. Networks
3. Security issues and the Web

Unit 6 – Impact of Computing – 2 hours

1. Impact of computing
2. Issues regarding intellectual property, ethics, privacy, and security in computing

Unit 7 – Practice Questions – 1 hour

1. Practice Questions