# BDSCP MODULE 08 | Advanced Big Data Engineering

Arcitura® CERTIFIED *Big Data Engineer*

## OVERVIEW

This course builds upon Module 7 by exploring advanced engineering topics pertaining primarily to the storage and processing of Big Data datasets. Specifically, it covers advanced Big Data engineering mechanisms, in-memory data storage and realtime data processing.

The course presents further considerations for building MapReduce algorithms and also introduces the Bulk Synchronous Parallel (BSP) processing engine, along with a discussion of graph data processing. The Big Data mechanisms required for developing Big Data pipelines, its stages and the design process involved in building Big Data processing solutions are also explored.

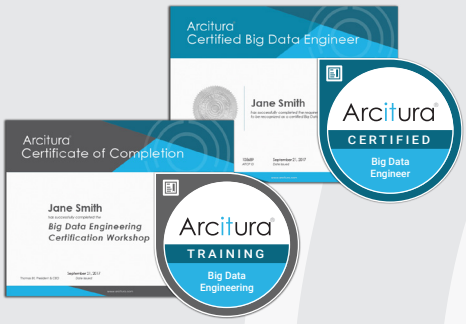
The following primary topics are covered:

- Advanced Big Data Engineering Mechanisms
- Serialization and Compression Engines
- In-Memory Storage Devices
- In-Memory Data Grids and In-Memory Databases
- Read-Through, Read-Ahead, Write-Through and Write-Behind Integration Approaches
- Polyglot Persistence
- Explanation, Issues and Recommendations
- Realtime Big Data Processing
- Speed Consistency Volume (SCV)
- Event Stream Processing (ESP)
- Complex Event Processing (CEP)
- The SCV Principle
- General Realtime Big Data Processing and MapReduce
- Advanced MapReduce Algorithm Designs
- Bulk Synchronous Parallel (BSP) Processing Engine
- BSP vs. MapReduce
- BSP Synchronous Parallel
- Graph Data and Graph Data Processing using BSP (Supersteps)
- Big Data Pipelines, including Definition and Stages
- Big Data with Extract-Load-Transform (ELT)
- Big Data Solution Characteristics, Design Considerations and Design Process

Duration: 1 Day

## TRAINING + CERTIFICATION

This course is part of a training and accreditation program through which official certification can be achieved and for which official training and certification badges can be issued.

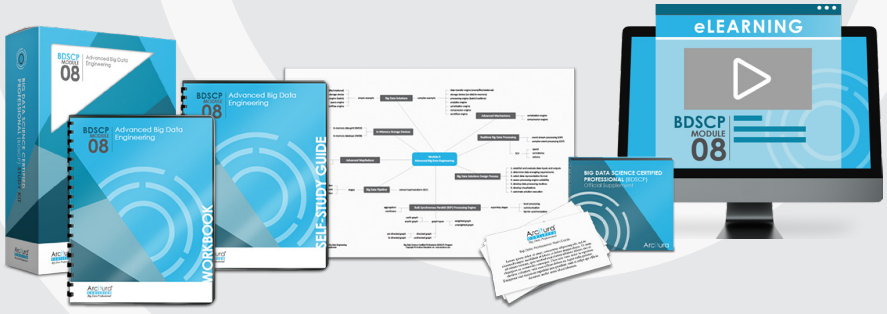



*www.arcitura.com/bdscp/engineer*

## eLEARNING + PRINTED STUDY KITS

This Arcitura study kit includes the contents listed below. These course materials are available in full-color printed format, as well as in eLearning subscription format, via online access and offline file download.

- Workbook
- Self-Study Guide
- Mind Map Poster
- Flashcards
- Audio Tutor Recordings (usb)

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# BDSCP MODULE 08 | Advanced Big Data Engineering

| | Certified Big Data Professional* | Certified Big Data Science Professional | Certified Big Data Scientist | Certified Big Data Consultant | Certified Big Data Engineer | Certified Big Data Architect | Certified Big Data Governance Specialist |
|---|---|---|---|---|---|---|---|
| **MODULE 01** Fundamental Big Data | ● | ● | ● | ● | ● | ● | ● |
| **MODULE 02** Big Data Analysis & Technology Concepts | ● | ● | ● | ● | ● | ● | ● |
| **MODULE 03** Big Data Analysis & Technology Lab | | ● | | ● | | | |
| **MODULE 04** Fundamental Big Data Analysis & Science | | | ● | ● | | | |
| **MODULE 05** Advanced Big Data Analysis & Science | | | ● | | | | |
| **MODULE 06** Big Data Analysis & Science Lab | | | ● | | | | |
| **MODULE 07** Fundamental Big Data Engineering | | | | ● | ● | | |
| **MODULE 08** Advanced Big Data Engineering | | | | | ● | | |
| **MODULE 09** Big Data Engineering Lab | | | | | ● | | |
| **MODULE 10** Fundamental Big Data Architecture | | | | | | ● | |
| **MODULE 11** Advanced Big Data Architecture | | | | | | ● | |
| **MODULE 12** Big Data Architecture Lab | | | | | | ● | |
| **MODULE 13** Fundamental Big Data Governance | | | | | | | ● |
| **MODULE 14** Advanced Big Data Governance | | | | | | | ● |
| **MODULE 15** Big Data Governance Lab | | | | | | | ● |

** The Certified Big Data Professional designation is automatically issued when achieving any other BDSCP certification. It can also be achieved by receiving passing grades on Exams B90.01 + B90.02.*



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